EXPERT ADVICE AND TIPS FOR EVERY AMIGA ENTHUSIAST

WIN! 5 POWER HD DISK DRIVES

AMIGA SHOPPER

From the makers of AMIGA FORMAT

ISSUE 30 ● OCTOBER 1993 ● £1.95

YOUR DEFINITIVE AMIGA GUIDE



SPEED UP YOUR AMOS CODE

AMOS Pro Compiler reviewed: page 58

CORRECT YOUR GRAMMAR

Proper Grammar reviewed: page 80

GET THE LAW ON YOUR SIDE

Amiga Advocate: page 72

FILE YOUR DATA

Powerbase database reviewed: page 55

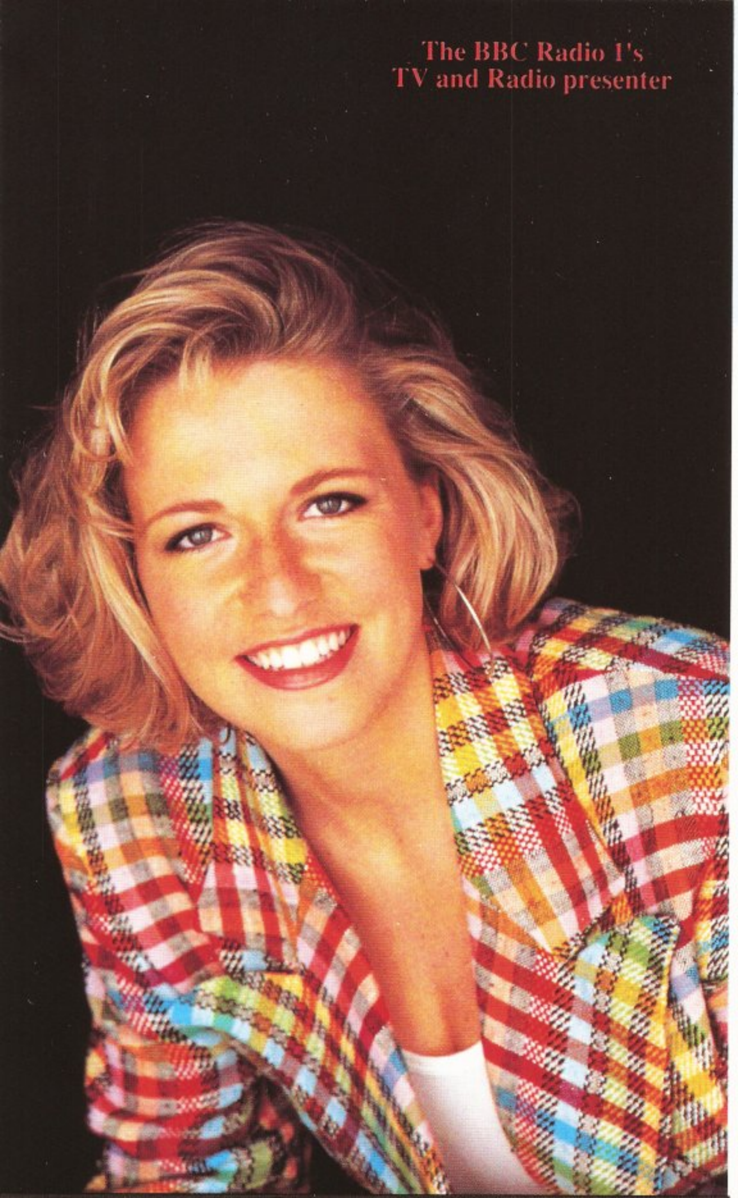
AMIGA ANSWERS

Seven fact-packed pages dedicated to solving genuine Amiga problems of all kinds. Whatever your worry, our experts will sort it!

PLUS

Desktop publishing, comms, music, C Programming, AMOS, ARexx, AmigaDOS, short reviews, letters, product locator, public domain, user groups, reader ads and more

Future Publishing
Your guarantee of value



INDI DIRECT MAIL
Proudly Presents
THE
JAKKI BRAMBLES COLUMN

Hi ,

Two guesses as to what I'm going to review this month. You'll probably get it in one.... **The new Amiga CD32**

July 16th at the Science Museum in London, Commodore Launched **'CD32** to a very excited audience; and what a launch it was! We all expected to see a very special Amiga but no one (except Commodore) could imagine just how special!

In fact, only in June of this year did Sega themselves quote "we could bring a 32 - bit console out tomorrow...but the problem is the price and I don't think that problem will be solved this year or next year" Well Commodore have definately knocked that theory on the head with a retail price of **£299.99.**

I won't go on about all the other breakthroughs this console has made as I know the magazines are full of reviews giving all that teckie stuff etc. but I really must say something about the staggering amount of software that's due for release. Somewhere between 50 and 100 titles will be available by Christmas and more importantly all the great software houses are now developing products, including Psygnosis, Ocean, Gremlin and many many more.

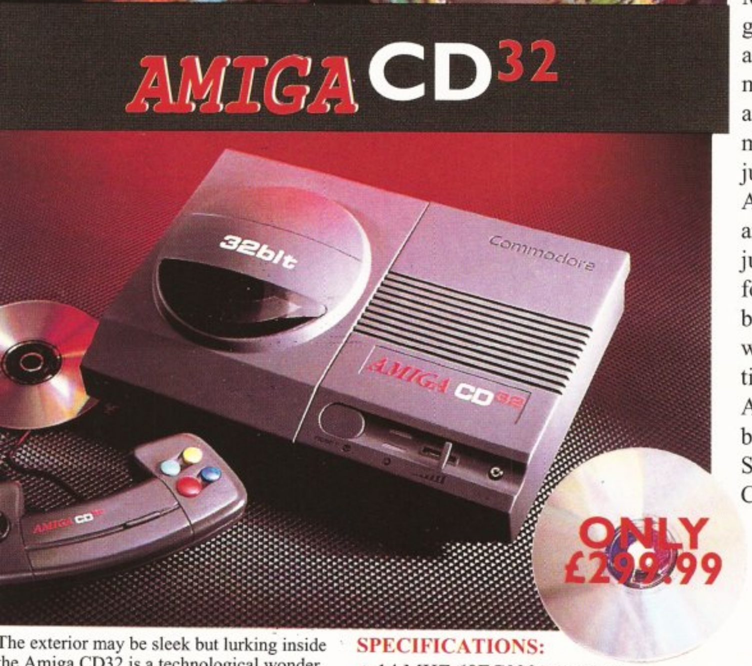
As if all this wasn't enough there's still more to come from this incredible box of tricks...**Full Motion Video**. By the inclusion of a neat little gadget called an **Mpeg Module** you'll soon be able to watch films on CD and that really does mean some really special products are just around the corner. I can't wait to see and hear all my favourite bands on CD and the Amiga CD is just waiting to play them.

Anyway I'm sure you're just as convinced as I am that this product from Commodore really is just a bit special and certainly changes the future for things to come the likes we have never seen before. Why don't you drop me a line and tell me what you think, in fact how about some suggestions as to what you'd like to do with the new Amiga and I'll get Indi to give one away for the best letter.

See you next month.

Cheers





The exterior may be sleek but lurking inside the Amiga CD32 is a technological wonder. At it's heart is the mightily powerful 68EC020 processor from Motorola. This contains the 32 - bit technology which has made the Amiga 1200 a runaway success throughout Europe.

Alongside it is Commodore's unique custom AGA (Advanced Graphics Architecture) chipset - comprising three chips nicknamed Paula, Lisa and Alice.

Together they make Amiga CD32 and awesome powerhouse of high speed graphics and stunning sound capabilities.

In fact, the machine can display 256,000 colours on screen (compared to Sega's Mega CD which can only display 64) and has a total colour palette of 16.8 million colours. Amiga CD32 also comes with a chunky 2 Meg of RAM (that's15 times more than Mega CD) and a double speed drive.

SPECIFICATIONS:

* 14 MHZ 68EC020 processor
* 2 Megs 32 - bit chip RAM
* 2 Joystick ports/controller ports
* S- video jack
* Composite video jack
* RF output Jack
* Stereo audio jacks
* Keyboard connector/ auxiliary connector
* Full expansion bus
* Headphone jack
* Headphone volume control
* External brick power supply
* Internal MPEG FMV expansion capability
* Multiple session disc capability

INDI MULTI MEDIA CLUB

A true 'One Stop Shop' for all members. On offer each month with an ever increasing product range , members can obtain software to cover every application including **Morphing, Rendering, Raytracing, Video** and a PD Library second to none. The Club also offers a very comprehensive range of videos including the **Cult Manga Titles, Music, Features and Special Interest**. There really is something to suit every ones taste. Membership costs only £10 and each member receives a quality gift on joining, even though there is absolutely no commitment to buy at any time. If you would like to be a part of this exciting club then call **Indi on 0543 419 999**

DMA ENSURES HIGHEST PRACTICE

As with most industries, the UK's personal computer industry has its shar of cowboys operating in the mail orde sector and at the receiving end a line u of despairing consumers who have suffere at their hands.

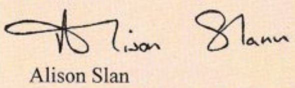
A personal computer is a sophisticate and expensive item and provided the pur chaser is dealing with a reputable an accredited supplier, buying a compute by mail order can be a perfectly safe an cost effective exercise. The Direc Marketing Association (DMA) was se up in April 92 to set and maintain hig standards for the sake of the industry an society at large, and to ensure that we ca continue to regulate our own activities o the basis of proper professional responsibility.

Membership of the DMA is not conferred lightly - it is a privilege whic entails responsibilities, to the consume as well as to the industry. The foundatio for this must be good practice. DMA members are required to abide by th highest standards as laid down in th DMA's code, enforced on members b The Authority of the DMA a separat body with an independent Chairman, an which is an assurance of vigorous self regulation and professional responsibility

DMA members also agree, as a conditio of membership, to abide by The Britis Code of Advertising Practice and Th British Code of Sales Promotio Practice: to apply the Mailing Preferenc Service file when appropriate: and t subscribe to the Advertising Standard Board of Finance (ASBOF) and to th Mailing Standards Levy as applicable.

The DMA symbol can only be used b members. Printed on stationary, advertising and other promotional material it demonstrates that these companies conform t the Association's high standards and ar subject to the DMA's Code of Practice thus enhancing the companies credibilit with customers, suppliers and of greates importance, the consumer.

Since the symbol was introduced las June, it has become synonymous wit quality , professionalism and and respon sibility. While it cannot be shown in an way which will become a sign of bes industry practice and of strict adherenc to DMA codes of conduct. The symbo represents authority for members an reassurance for consumers. It has been a high valued mark of confidence signifyin to the consumer the truly professiona edge of the industry.



Alison Slan
(Director of Public Relations,DMA)

AMIGA SHOPPER
ISSUE 30 • OCTOBER 1993

IN THIS ISSUE

COMMENT



The editor, Cliff Ramshaw, offers his penny's worth...

It's always been a dream of mine to make my own film, and I suspect that many of you share that ambition.

Let's face it, one of the things that led many of us to choose an Amiga over rival machines was its exceptional graphics. The graphics potential of the machine continues to grow as the hardware is improved – and the imagination and skill brought to bear on this hardware, producing some stunning effects, never ceases to amaze. Video has to be one of the most exciting fields of Amiga computing.

So this month we're showing you exactly how to do it. Not only are we giving you extensive hints and tips about setting up and using the equipment, but we're also recommending the most cost-effective kit you can get to do the job. In fact, you'd be surprised at how much is possible without spending *anything*. Turn to page 12, and tap one of the richest veins your Amiga has to offer.

The next big thing

Last year it was called the *Future Entertainment Show*. This year it's going to be bigger and better, and it's called the *Second Future Entertainment Show*. From Thursday 11 to Sunday 14 November, London's Olympia is going to be the Mecca of computer fans nationwide.

It's going to be quite a media event, too. For one thing, the TV programme *GamesMaster*, watched by around 3 million viewers every week, is going to be broadcasting live on the show's opening night at 6.30. This is quite a coup: it's the only non-sporting event Channel 4 has ever covered in an outside broadcast, and it's the first time a live broadcast has ever occurred from a computer show. But that's not all. BBC Radio One is to be the show's official radio station, again broadcasting live.

And even that's not all. You could also be one of the first people in the country to see Disney's latest blockbuster *Aladdin*. It may sound like a kiddies' film, but we have it on good authority that it's absolutely smashing for adults too, especially since it has that zany Robin Williams bloke playing the djinni. Anyone booking a show ticket for Friday will also be given a free ticket to an *Aladdin* preview taking place on Sunday 21 November. You'll be able to select your venue from a variety of cinemas up and down the country.

And, yes, you've guessed it, there's more. For at the show you'll get the chance to see all the latest developments on the Amiga front. Plenty of show stalwarts will be there, including good old Commodore, who'll be showing off their Amiga CD32 and, let's hope, lots of lovely software to go with it. Among the other exhibitors so far booked up (though remember, it's early days yet in a booking-in-exhibitors sort of time frame) are Datel Electronics, makers of the Action Replay cartridges, Digita International, famous for their *Wordworth* word processor, and Power Computing with their high-density disk drives and other assorted hardware.

If you're looking for some good bargains, you won't go far wrong. There'll be a whole host of exhibitors selling hardware and software at unbeatable prices. This'll be your chance to treat yourself to that upgrade you've been lusting after.



There's really been nothing like the Second Future Entertainment Show since the first one, and even then, that wasn't quite as huge and lovely.

You'll also have the opportunity to meet the *Amiga Shopper* team, put questions to us, give your suggestions for the magazine, buy us beer, that sort of thing. Teams from many of Future Publishing's other magazines will also be there, including *Amiga Format, Amiga Power, GamesMaster*, and plenty of those console types.

And, just supposing you *are* into computer games, then you're in for a rare treat. There'll be games galore, on every conceivable format, including the new Amiga CD32. You'll be able to witness the finals of the National Computer Games Championships, and even compete if you register with your local Virgin Games Centre or Megastore before October 25 (October 18 if you live in Scotland). If you are a whiz with all things sprite-like and colourful, you ought to consider entering: there's a first prize of £10,000 up for grabs, with £4,000 going to the runner-up.

So here are all the details: the show runs from Thursday 11 to Sunday 14 November at the Grand Hall, Olympia, London. Thursday opening will be 10 in the morning till 8 in the evening (to accommodate the *GamesMaster* broadcast); Friday's will be 10 till 5, while Saturday and Sunday's will be 9 till 5. Tickets are £6.95, or £24.95 for a family group, which consists of four people, at least one of which must be an adult. Now, last year's show got a tad on the crowded size.

So, to prevent the same thing happening again this year, we've rather cleverly implemented an advance ticket sales system. *You must book your tickets in advance if you want to attend.*

The "hotline" number, as it is playfully called, is ☎ 051 356 5085. Go on, make that call, and we'll see you there in November.

YOUR CHANCE TO CONSUME

Fans of consumer electronics, which must mean most of us these days, will be flocking to London's Olympia from 16 to 20 September. It's the site of *Live '93*, a show dedicated to the exhibiting of consumer electronics goods.

There you'll find not only computers, but also hi-fi's and televisions, videos, cameras and camcorders... the list goes on. Tickets are £7 each; a family ticket, which will admit two adults and three children, costs £16. To book, phone ☎ 071 373 8141.

Serious CD software

The first non-games software for Commodore's brand new Amiga CD32 is almost ready for release.

It is *INSIGHT: Technology*, a disc containing photo images and video sequences that illustrate 260 items of modern technology, ranging from the ballpoint pen to the Space Shuttle. The title is being produced by Optonica, who also sell, for only £4.99, *Pandora's CD*, a multimedia sampler containing images and sounds from a variety of sources, including *INSIGHT Technology* itself.

Work on the next INSIGHT title is well underway. *INSIGHT: Dinosaurs* is being produced in cooperation with the British Natural History Museum, and is likely to appeal to *Jurassic Park* fans. It will feature two- and three-dimensional computer graphics, video, photos, narration, music and sound effects. The title is expected to be available by October for a cost of £39.95 from Optonica ☎ 0455 558282.

A price for *INSIGHT: Technology* has yet to be announced; but the title will be released through Commodore ☎ 0628 770088.



Learn all about dinosaurs with Optonica's forthcoming CD32 title. This is no game!

DEFERRED CREDIT ON ALL ORDERS OVER £200.
*PAY 10% NOW AND NOTHING MORE FOR 3 MONTH

INDI DIRECT MAIL

CUSTOMER CHARTER

INDI Direct Mail is original and very exciting. Before you buy mail order you must first be confident that you will receive the product you've ordered and that the supplier still be there in the future, should you need them.

A mail order purchase from INDI is a safe and secure decision, and here's why.

INDI is a wholly owned subsidiary of a public company now in it's tenth year of trading and specialising in the supply of computer products.

With a turnover approaching £30 million per annum, we have the resources and the purchasing power to offer you the best deals, deliver them next day nationwide and always be around when you need us.

The INDI sales team have been trained to

SALES AND SUPPORT

take your order with the utmost care and efficiency. All stock offered for sale is held in stock, centrally at our group ware house complex and is available for next day delivery, direct to your home or business. If at any time we are out of stock your money will not be banked until the product is available (a point worth checking should you be tempted to purchase elsewhere)

General information regarding product is available from our sales team, however technical support is always on hand should you need assistance.

All prices quoted are inclusive of VAT.

INDI are now able to offer competitive credit

INDI TELESALES

TEL 0543 419999 FAX 0543 418079

CREDIT FACILITIES

facilities on all orders over £200. All credit facilities are subject to status and applicants must be over the age of 18.

If you would like a quote simply call our our sales line where acceptance can normally be notified within the hour. We are also able to offer Credit Insurance to cover repayments in the event of sickness or unemployment.

AMOUNT* OF CREDIT	12 MONTHS		24 MONTHS		36 MONTHS	
	MONTHLY PYMNT S	TOTAL PAYABLE	MONTHLY PYMNTS	TOTAL PAYABLE	MONTHLY PAYABLE	TOTAL PYMNTS
200	£22.00	£264.00	£12.00	£298.32	£9.31	£335.63
500	£54.99	£659.88	£31.06	£745.44	£23.27	£837.72
1000	£109.98	£1319.76	£62.13	£1491.12	£46.54	£1675.44

APR 29.9% WRITTEN QUOTATIONS AVAILABLE ON REQUEST
*After deposit paid

AFTER SALES AND SPECIALIST SERVICE

All products are guaranteed for 12 months. Some products carry a 12 months at home service and repair guarantee (where indicated). In the unlikely event that any product purchased from INDI arrives at your home faulty, we will collect from your home and replace the product completely free of charge.

As part of our policy of continual product development and refinement, we reserve the right to change specifications of products advertised. Please confirm current specifications at the time of ordering.

Prices are valid for month of publication only.

AMIGA A1200

ALL NEW 32 - BIT AMIGA



LOOK A1200 PRICE CRASH

COMIC RELIEF PACK

The event may be over but the fund raising still goes on. If you're looking for the l Amiga technology then this is the starter pack for you. Based around the outs A1200, this pack also gives you sleepwalker, a most addictive platform game from software. You'll be pleased to know that every one of these packs purchased another £10 for Comic Relief.

A1200 STANDARD FEATURES.

* 68020 Processor .* PCMCIA Slot. * 2MB Chip RAM. * 3.5" In Drive * AA Chipset. * Built in TV modulator. * Alpha numeric keypad * 12 Months at home maintenance.

FREE Sleepwalker and £10 donation to Comic Relief

INDI PRICE

£289.99 or from **£11.04*** per month

*(Credit price based on 36 monthly payments APR 29.8%. Total repayment £397.92 and 90 day deferred payments.

OFFICIAL A1200 HD SYSTEMS

The Amiga 1200 supplied by Indi Direct Mail now includes the official (legal) Commodore installation disk and hard drive utility manual. Indi are proud to be an official supplier of Amiga 1200 Hard Drive systems, that include the official software, documentation and on - site warranty.

A1200 80 MEG HD INDI PRICE £499.99

A1200 120 MEG HD INDI PRICE £529.99

INDI A1200 ADDED VALUE PACKS

Pack Contains:

* International Games Challenge. * The Cool Croc.
* Paradroid 90. * Zapsac Rucksack and Zappo T - shirt.

INDI PRICE £19.99

STOP PRESS

ALL A1200 PRICES CRASHED INCLUDING ALL HARD DRIVE SYSTEMS

80 Mb Hard Disk upgrades available on any A1200. Upgrade does not invalidate your Wang warranty on A1200 and Hard Disks. Phone for a q

AMIGA A4000



FREE INDI GRAPHICS PACK(SEE JAKKI BRAMBLES PAGE)

It's here - The new Amiga 4000/030

The NEW Amiga 4000/030 features a EC68030 processor running at an incredible 25Mhz, and upgradable at a later date to a faster processor. The 4000/030 has a powerful 2 Mb of 32 - bit RAM (1 Mb chip & 1 Mb fast) expandable to 18 Mb using industry standard 32 - bit Simms module. In line with the Amiga Flagship 4000/040 the 4000/030 features the new AGA graphics chipset, giving you a massive pallet of 16.8 million colours. A range of hard drive options are available from 80 - 240 Mb and includes a SCSI option.

4000/030 80 Mb HD INDI PRICE £929.99

Other Drive Options

4000/030 120 Mb HD INDI PRICE £999.99

4000/030 240 Mb HD(exclusive to INDI)
Phone for price.

4000/030 120 Mb SCSI HD (exclusive to INDI)
Phone for price

A full range of approved upgrades are available for the 4000/030, including additional memory modules, hard drives, PC bridge boards, FPU's (68881 &68882)and the 24 - bit Opal Vision graphics and video system

NEW MONITOR RANGE

THE NEW DUAL SYNC1942 Monitors have been specially designed for the New Amiga 1200 and 4000 computers. Both monitors feature built - in stereo speakers.

INDI PRICE

1940 Monitor £279.99

14 inch screen size - 0.39 mm dot matrix

INDI PRICE

1942 Monitor £379.99

14 inch screen size - 0.28 mm dot matrix



ZAPSAC AND T - SHIRT
INDI PRICE £17.99
(Free with A1200 Comic Relief Pack, INDI A600 Accessory Pack)



Parnet Adaptor for CDTV

Connect a CDTV player to any Amiga, and access t of CD - ROM software.The Parnet interface and will allow the Amiga CDTV to be used as a CD drive withe any Amiga and will give any Amiga own to the vast range of CDTV software currently availa The CDTV player offers excellent value for mon compared with a standard CD - ROM drive and i Most CD - ROM drives will set you back over £4 CDTV will cost you less than £300 and will play au in addition to CD - ROM / CDTV disks your Ami face cable and PD disk with driver software for you player. **(The Parnet adapter can be u link any Amigas together)**

INDI PRICE £39.

A4000/030 + CDTV + 1942 MONITO PARNET. INDI PRICE £1599.
CDTV + PARNET.
INDI PRICE £329.99

AMIGA A600 PRICE CRASH



THE WILD THE WEIRD AND THE WICKED A600 is an ideal starter pack containing a considered mix of software, making the most of the Amigas capabilities.

PACK CONTAINS:

* A600 Single Drive
* Built in TV Modulator
* 1 Mb Memory
* Pushover: Grandprix
* Silly Putty: Deluxe Paint III
* Mouse and Manuals

NEW LOW LOW PRICES

~~£289.99~~ **£215.99**

A600 - SD A single drive Amiga for those of you requiring a basic A600 at a very c petitive price.

PACK INCLUDES: A600 single drive, built in TV modulator, 1 Mb memory. 12 Mon home service

INDI VALUE ADDED FREE * Kick Off 2 * Pipemania * Space Ace * Populous * Microswitched Joystick

INDI PRICE ~~£239.99~~ **£189.99**

A600 EPIC PACK (40 Mb HD) PACK INCLUDES:

A600 Hard Disks (40Mb) * 1 Mb Memory * Epic * Rome * Myth * Triv Pursuit * Amiga Text * Deluxe Paint III * 12 Months at home service.

PLUS INDI ACCESSORIES PACK

INDI PRICE ~~£395.99~~ **£379.99**

INDI A600 ACCESSORY PACK

* Microswitched Joystick * Lockable Disk Box * Disk Wallet * 10 Blank Disk Kick Off 2 * Pipemania * Space Ace * Populous * Zapsac A600 Carry Case * Zappo T - Shirt.

INDI PRICE £26.99

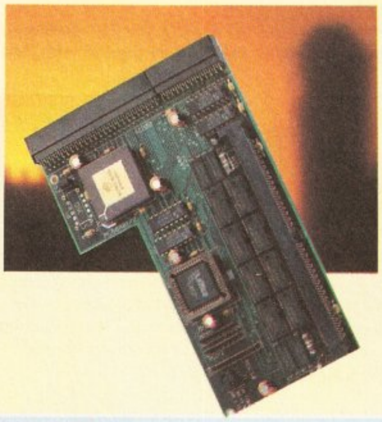
ANT THE BEST IN PROFESSIONAL AMIGA. WHY NOT TAKE ADVANTAGE OF THE CREDIT DEALS AVAILABLE (SUBJECT TO STATUS). CREDIT AVAILABLE ON 6,12, 18, 24, 36 MONTHS. WHY NOT RING NOW FOR A QUOTE. SAME DAY RESPONSE.

AMIGA RECOMMENDED PERIPHERALS & ACCESSORIES

NEW FROM MICROBOTICS!!!. M1230XA ACCELERATOR LAUNCH!!

botics beats the competition in price/ performance/ features and configs. INDI is very pleased to announce the availability of the new 68030 rator product for the A1200: the microbotics M1230 XA (call it the for short). 50 Mhz as standard! Huge 128 MB memory design is stanthe biggest memory space in any A1200 peripheral) just look at these cations and prices!

30 XA W/40 MHZ EC 030 OMB **INDI PRICE £177.17**
30 XA W/40 MHZ EC 030 4MB **INDI PRICE £285.17**
30 XA W/40 MHZ EC 030 8MB **INDI PRICE £639.99**
30 XA W/50 MHZ MMU 030 0MB **INDI PRICE £399.99**
30 XA W/50 MHZ MMU 030 4MB **INDI PRICE £499.99**
30 XA W/50 MHZ MMU 030 8MB **INDI PRICE £711.99**



MBX1200.

The original and best floating point unit and memory upgrade for the Amiga A1200. Available with 0,4 or 8 MB of 32 bit Fast RAM and a choice of floating point units.Now complete with real time clock (RTC)

IMBX1200Z 6881 14 MHZ 0MB **INDI PRICE £ 91.32**
MBX1200Z 6881 14 MHZ 4MB **INDI PRICE £199.00**
MBX1200Z 6881 14 MHZ 8MB **INDI PRICE £519.99**
MBX1200Z 6882 25 MHZ 0MB **INDI PRICE £132.61**
MBX1200Z 6882 25 MHZ 4MB **INDI PRICE £240 61**
MBX1200Z 6882 25 MHZ 8MB **INDI PRICE £579.99**
MBX1200Z 6882 50 MHZ 0 MB **INDI PRICE £200.14**
MBX1200Z 6882 50 MHZ 4MB **INDI PRICE £308.14**
MBX1200Z 6882 50 MHZ 8MB **INDI PRICE £669.99**
68882 FPU UPGRADE **INDI PRICE £669.99**

AUDIO VISUAL



MEGAMIX. Low cost, hi spec digital effects cartridge plugs into the printer port of the Amiga. Allows stereo sampling from almost any musical source.

INDI PRICE £29.99



TAKE 2. Animation package is a must foe computer artists and enthusiasts of all ages. As used in Rolf Harris Cartoon Club.

INDI PRICE £37.99



VIDI AMIGA 12. The ultimate low cost colour digitiser for the Amiga. "The best value full colour digitiser on the market" AMIGA FORMAT.

INDI PRICE £75.99

MBO VIDI AMIGA 24(RT). For the more serious user, this bit version will again capture from from any video source with true o realistic images! A staggering 16.7 million colours can be utilised incredible results. Full AGA chipset support.

DI PRICE £239.99



ROCTEC ROCGEN
Entry level Genlock for all Amigas. Record stunning Amiga Graphics into standard video or overlay text and graphics onto a video signal.

INDI PRICE £69.99

ROCTEC ROCGEN PLUS. As above but with extra features such as tinting and signal inversion. Allows for real time editing of graphics. Compatible with all Amigas.

INDI PRICE £133.99

ROCTEC ROCKEY. The ultimate accessory for Amiga / Video fans. Separate RGB controls to chroma key on any colour.

INDI PRICE£249.99

ROMBO VIDI AMIGA 12 (RT). Based on the best selling Vidi Amiga 12. This all new version offers real time colour capture from any video source. Full AGA chipset support as standard for all A1200 / 4000 users.

INDI PRICE £139.99

MEMORY UPGRADES AND ACCESSORIES

M501 The original 0.5MB battery backed upgrade for the A500.

INDI PRICE £29.99

M502 The original H1 MB battery backed upgrade for the A500.

INDI PRICE £49.99

8 Up memory board. Designed for the A1500/ A2000. Memory upgradeable to 2/ 4 or 8MB

INDI PRICE £69.99

Hard frame suitable for A1500/ A2000. Allows for the interface of a SCSI hard drive.

INDI PRICE £110.99

AMIGA PERIPHERALS



2MB SMARTCARD. The original and still the only fully PCMCIA compatible memory card for A600/ A1200.Comes with lifetime guarantee. Beware of cheap imitations.
INDI PRICE £129.99

4MB SMARTCARD. Same as above but maximum 4MB.
INDI PRICE £199.99

PPO 601
door upgrade for the A600, 1Mb with
INDI PRICE £49.99
PPO 601 INC As above only 512K,
ock **INDI PRICE £29.99**



DISK DRIVES



ZAPPO EXTERNAL FLOPPY

You've seen all the reviews on this popular and affordable second Amiga drive. Compatible with all Amigas.

INDI PRICE £59.99

Quality: 9 out of10. Exceptional value for money. AMIGA COMPUTING JAN 93

1084ST MONITOR.



Commodores original and best selling colour stereo monitor. Now includes swivel and tilt stand for total ease of use.

INDI PRICE
£189.99
(£179.99 if purchased with A600 / A1200 / A1500)

OPAL VISION VIDEO PROCESSOR

Plug this card into the Opalvision mainboard and add a wealth of additional features and functionality. Included is the long awaited "Roaster Chip" for an unlimited number of digital video effects.

Features include:-
* 24 - bit real - time frame grabbing from composite or S - Video
* Professional quality genlocking
* High quality digital video effects
* "Roaster Chip"for effects of unequalled quality
* 24 - bit Picture - in Picture and Video Sandwich Keying

INDI PRICE **£899.99**

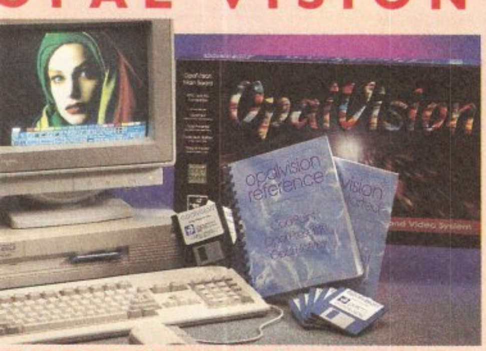
THE OPAL VISION VIDEO SUITE

A power packed video and audio mixing, switching and transcoding device. This 19 inch rack mount unit is so advanced that it actually has its own internal computer. With a total of 9 video and 10 audio inputs available the flexibility of this professional tool is incredible

Features include:-
* 4 X compoite inputs
* 4 x 5 video inputs (SVHS, Hi - 8 of Y/C)
* 2 x RGB inputs
* 1 x Master sync input
* 1 X Composite main output
* 1 x S - Video main output1 x RGB mains output
* 1 x composite preview
* 10 x mono audio inputs (or 5 stereo pairs)
* Stereo output with 5 band equalizer

INDI PRICE **£899.99**

OPAL VISION



EW FOR SEPTEMBER RELEASE!

e already acclaimed Opalvision Board takes three ther leaps into the future with the official launch he Opalvision modules. With truly awesome abilities the Amiga can now become the most fessional 24 - bit video graphics power station r!

The NEW OPAL VISION system(Rev.2)

The amazing Opalvision 24 - bit graphics board and software suite has been updated and is now even better value for money.

The software suite now includes:

Opal Paint V2.0 - Now includes full magic wand implementation and Alpha Channel that allows photo compositing with selectable levels on a pixel by pixel basis.The new Chrominance effect allows absolute, real time control of image contrast, brilliance and re - mapping of colours.

Opal AnimMATE V2.0 - ofering real time play back of animations created by ray tracers, landscape generators, morphers and all other 24 - Bit software.

Opal Hotkey V2.0 - Display OpalVision graphics anytime with key combinations.

Opal Presents - Comprehensive, icon - driven presentation package.

Special Limited off er
IMAGINE V2.0 for only **£59.99** when purchased with OPALVISION
Imagine 3D is the most popular 3D rendering software, that now supports OpalVision.This is a full version that would cost £300 if purchaed separately.

"Quite simply, it's a spectacular product" *- Amiga Computing*
"Undoubtedly the finest, most professional paint program to arrive on the Amiga" *- Amiga Format*
"Professonal quality at this Price can't be turned away" *- Amiga User International*
"The verdict was unanimous - brilliant" *- Amiga Shopper*

INDI PRICE **£549.99**

OPAL VISION SCAN - RATE CONVERTER

Add this card to the Opalvision Main board and acieve 31 KHz non interlaced output of Amiga graphics. On board memory also servesas a separate frame - store for dual frame bufferapplications
Features include:-
Converts interlaced PAL and NTSC to 31KHz non interlaced flicker - free display
No external power supply needed
Works with any multi - sync / multi scan monitor
Incudes full, infinate window Time base correction
Operates in RGB for superior quality

INDI PRICE **£899.99**

TERMS AVAILABLE OVER 6, 12, 24, & 36 MONTHS SUBJECT TO STATUS. WHY NOT RING FOR A QUOTE. SAMEDAY RESPONSE. (SEE EXAMPLE)

Panasonic *Quiet* Colour Printing

DIRECT MARKETING ASSOCIATION

We researched the colour printer market at great depth to find a colour printer good enough to cope with Amiga's powerful output, yet at an affordable price.
We found the perfect printer in the KX - P2180 and KX - P2123 quiet printers.
We then considered that if you were going to buy a Panasonic printer you would probably need a quality word processing package to use with it. We found that too, with 'Wordworth' yet at a retail price of £129.99 we thought that might be a little too expensive on top of your printer purchase! So together with Panasonic we decided to give a copy of 'Wordworth' free with every Panasonic printer. How's that for added value?

Panasonic KX - P2180



***WORDWORTH COMPLETELY FREE! WITH PANASONIC QUIET PRINTERS.** The writers choice. The ultimate word processor for AMIGA computers. Wordworth is undoubtedly the ultimate word / document processor for the full range of AMIGA computers. The graphical nature of WORDWORTH makes producing documents faster and easier, with the enhanced printing fonts (including full Panasonic KX - P2180 and KX - P2123 colour printing support), Collins spell checker and thesaurus, no other word processor comes close. "Without doubt this is one of the best document processors for the AMIGA, Today" (Amiga Format)
NORMAL RRP £129.99 inc. VAT

INDI PRICE £179.99

The new Panasonic KX - P2180 9 -pin quiet printer. Produces crisp clear text in mono or in 7 glorious colours with new quiet technology. THe new KX - P2180 is typically 15dBa quieter in operation, than the competition.

* **Fast Printing** Speeds 192 CPS NLQ
* **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta,black)
* **Quiet printing** Super quiet 45 - 48 dBa sound level (most matrix printers are typi cally in excess of 60 dBa)
* **6 Resident Fonts** Over 6,100 type styles using Courier Prestige, Bold PS, Roman, Script and Sans Serif Fonts.
* **3 Paper Paths** Paper handling from bottom, top and rear for total flexibility
* **1 Year Warranty** for total peace of mind

Panasonic KX - P2123



INDI PRICE £239.99

The new high performance Panasonic KX - P2123 24 pin. Quiet colour printer offers leading edge quiet printing technology at an affordable price

* **Fast Printing Speeds** 192 CPS draft, 64 CPS LQ and 32 SLQ.
* **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta, black)
* **Quiet Printing** Super quiet 43.5 - 46 dBa sound level (most matrix printers are typically in excess of 60 dBa)
* **7 Resident Fonts** Over152,000 type styles using Super LQ, Courier Prestige, Bold PS, Roman, Script, and Sans Serif Fonts.
* **24PIN Diamond** Printhead High performance and high quality output
* **1 Year Warranty** for total peace of mind.

Panasonic LASER PRINTER

KX - P4410 LASER PRINTER

KX - P4430 LASER PRINTER





WORDWORTH COMPLETELY FREEWITH PANASONIC LASER PRINTERS.
The writers choice. The ultimate word processor for AMIGA computers
NORMAL RRP £129.99 inc VAT



Once again INDI have joined together with Panasonic to offer all Amiga owners the most outstanding Laser Printer offer ever. We are now able to offer high quality, professional laser printing at affordable prices. We are also giving away a copy of Wordworth with every Panasonic Laser Printer purchased (RRP £129.99). Whether you are looking for a laser printer to handle word processing, DTP, presentation or complex graphic applications - the Panasonic range offers you the power to meet your requirements.

KXP - 4410

* 5 pages per minute
* 28 resident fonts
* Optional 2nd input bin(total printer capacity 2 x 200 sheets)
* Low running costs
* Parallel interface
* Optional memory expansion to 4.5 Mb (0.5 as standard)
* HP laserjet II Emulation

INDI PRICE £549.99 inc. VAT
Imminent price increase.
This price while stocks last.

WORDWORTH COMPLETELY FREE WITH LASER PRINTERS

Panasonic 2 YEAR ON-SITE WARRANTY

KXP - 4430

* Satinprint (optimum resolution technology)*
* 5 Pages per minute
* HP Laserjet III Emulation, PCL 5
* 8 Scalable fonts & 28 bitmap functions
* Optional 2nd input bin (total print er capacity 2 x 200 sheets
* Optional memory expansion to 5.0 Mb (1 Mb as standard)

INDI PRICE £699.99 inc. VAT
Imminent price increase.
This price while stocks last.

*(Satinprinters use optimum resolution technology to produce truly outstanding print quality. This software technique smooths away traditional jagged edges on curved characters and lines by varying the printed dot size

WORDWORTH COMPLETELY FREE WITH LASER PRINTERS

Panasonic PRINTER ACCESSORIES



1) PANASONIC AUTOMATIC SHEET FEEDER
Automatic sheet feeder for KXP 2180/ KXP 2123 holds 80 A4 sheets. **INDI PRICE £89.99**

2) PRINT DUST COVER
Specially tailored quality dust cover for Panasonic KXP 2180/ KXP 2123 printer. **INDI PRICE £8.99**

3) PRINTER STAND
2 piece printer stand. **INDI PRICE £9.99**

4) PAPER PACK
500 sheets quality A4 paper. **INDI PRICE £9.99**

5) CONTINUOUS PAPER
2000 sheets 1 part listing paper. **INDI PRICE £19.99**

6) PARALLEL PRINTER CABLE
To be used when connecting Amiga to Panasonic printers. **INDI PRICE £8.99** (£5.99 if purchased with a printer)

7) PANASONIC COLOUR RIBBON
Colour ribbon for KXP 2180/ KXP 2123. **INDI PRICE£18.99**

8) PANASONIC BLACK RIBBON
Black ribbon for KXP 2180/ KXP 2123. **INDI PRICE £9.99**

SAVE ££££'S ON THE FOLLOWING ACCESSORY PACKS

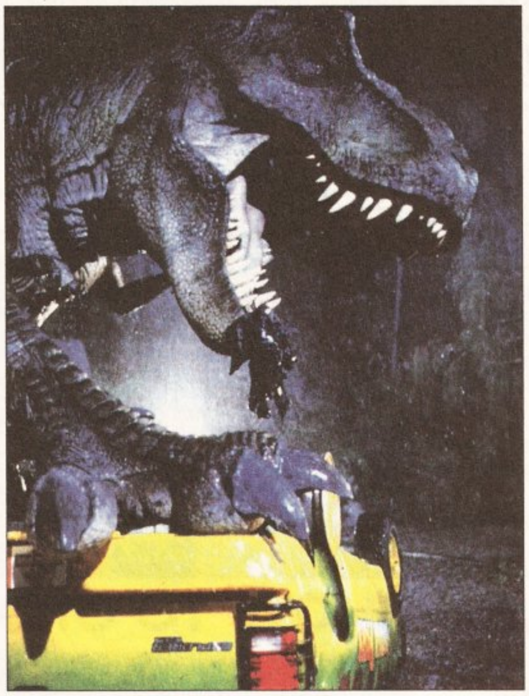
PACK 1
PANASONIC COLOUR RIBBON PACK
Contains 6 colour ribbons for the KXP 2123 RRP £119.99.
INDI PRICE £34.99 SAVE £30!!!

PACK 2
PANASONIC RIBBON PACK
Contains 2 black and 4 colour ribbons for KXP 2180/ KXP 2123.RRP £99.99.
INDI PRICE££69.99 SAVE £30!!!

PACK 3
PANASONIC DELUXE ACCESSORY PACK
Contains automatic sheet feeder, 2 black ribbons, 2 colour ribbons, 1 dust cover, 2 piece printer stand. RRP £169.99 **INDI PRICE £139.99** SAVE £30

Add £2.50 carriage to all printer accessories or combinations thereof

AMIGA BITES DINOSAUR



Contrary to what you may have heard, the dinosaurs in Steven Spielberg's *Jurassic Park* were not created from DNA held in blood ingested by prehistoric insects fossilised in amber. They were created by an Amiga 2000 and a Video Toaster.

To be more precise, a three-dimensional wire frame model of a Tyrannosaurus Rex was created with an Amiga and Toaster. They were used by Stefen Dechant to create "animated storyboards" that helped the film's makers to choreograph dinosaur movements before rendering them on more powerful Silicon Graphics workstations. The Amiga/Toaster combination was used primarily for its speed.

These details, and a whole host of other facts about the film, are available in the book *The Making Of Jurassic Park*, published by Boxtree Limited for £8.99. Its ISBN number is 1-85283-774-8.

Link into the net

Full linkage to the Internet service is now available for just £11.75 a month.

Internet is a loose network in which all of the major academic, commercial and military computer installations in America, as well as many sites from around the world, participate. It enables users to rapidly exchange mail messages, information and programs. A particularly important and useful feature of Internet is Usenet, a high-speed, international news conference.

Demon are the UK-based company that provides an Internet link via a leased line for only £10 per month, plus VAT. A joining fee of £12.50 is also charged, again exclusive of VAT. Once you have joined, you can dial into Internet at one of three locations: London, Warrington and Edinburgh.

Demon are also in a position to offer network and leased line services to users. As an example, the company will supply a network bi-directional V.32bis 14,400 reserved line for an initial charge of £750 plus £100 per month. Both prices exclude VAT. Call Demon ☎ 081 349 0063.

PHONE CORRECTIONS

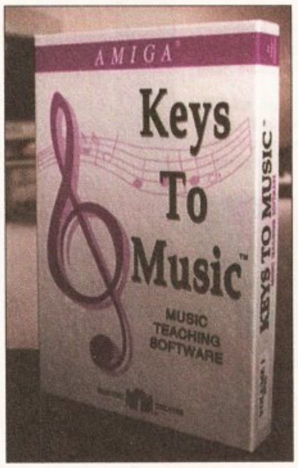
Last month we printed the wrong number for the First Computer Centre in Leeds. The correct number is ☎ 0532 319444. Also, if you have had any trouble getting in contact with Hydra Systems, you might want to try faxing them instead on ☎ 0203 473 333.

Get into the groove

Here's an interesting-sounding package for music fans. Not a sequencer or a sampler, but a package designed to actually *teach* music, it's already received wide acclaim in the States.

It's called *Keys To Music*, and is eventually to consist of five volumes. The producers, Electric Theatre, have just announced the release of volume two, *Learning to Write Music*. The previous volume, *Learning to Read Music*, is already in use as a teaching tool in Johns Hopkins University, Baltimore, Maryland.

Not aimed at students of any particular instrument, the programs are rather designed to give a good grounding in music to any potential musician, from seven year olds through to professionals. They make use of synthesised speech, printed output, click-to-play examples and history to help get the message across. That message, in the case of volume two, includes tutorials on time signatures, major and minor scales and key signatures, English and Italian dynamic marks and tempo symbols, musical "shorthand", and the beginnings of musical form and composition. The program culminates in a demonstration of song writing.



Here's an Amiga music package that actually helps you learn about the subject.

The *Keys To Music* packages cost $59.95 each, and are available from Stateside-based company Electric Theatre. Call them on ☎ 0101 215 379 4538.

HARD DRIVES TO TAKE AWAY

A new removable hard drive hits the streets from SyQuest Technology. The SQ3105S is a 3.5 inch drive, standing one inch high, that accepts 110Mb removable cartridges.

The drive boasts an average data seek time of under 14.5ms, and can transfer data at up to 4Mb per second. It connects via a SCSI interface, and is available for around £586, with each additional 110Mb cartridge costing £94. For more details call SyQuest ☎ 010 49 751 560 500.

Laser-guided output

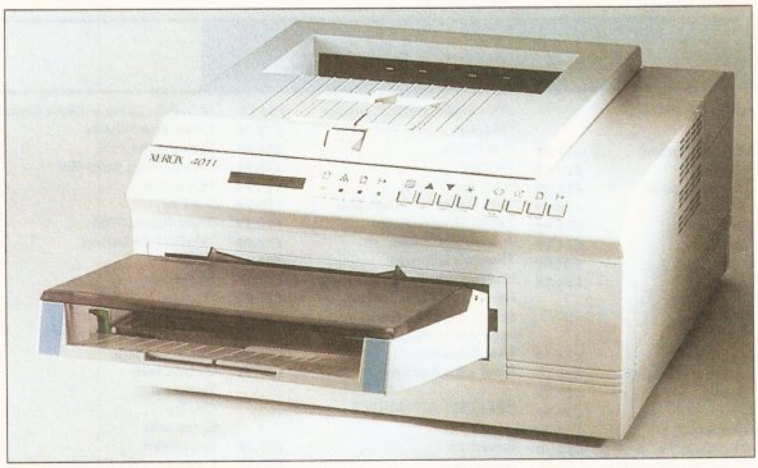
Another printer enters the laser war, this time from Xerox. The Xerox 4011, at £1,375, is a printer aimed primarily at business users.

The compact little unit will print up to eight pages per minute, and is connectable to a computer via a serial or parallel interface. It comes with a variety of emulations: HP Laserjet III (PCL5), HPGL 7475A, Epson FX-80, Diablo 630, IBM ProPrinter II and XES. If you need PostScript, then you'll also be interested in the optional XScript support, which is Xerox's PostScript emulation.

3Mb of memory is supplied with the printer, which should be enough for most purposes. But if you need more, you can expand it to 5Mb. Print resolution is 300 dots per inch.

Up to 250 A4 sheets can be stored in the printer's tray, while envelopes, transparencies and so forth can be fed manually. A second paper tray is available as an option.

You can get a Xerox 4011 for £1,375 from Xerox ☎ 0895 251133.



Xerox's 4011 is a compact laser printer that's ideal for small businesses.

Video winner

An Amiga has helped a young video enthusiast to snatch first prize in the Best Junior Entry category of the Institute of Amateur Cinematographers International Film & Video Festival.

Ben Northover created his video, entitled *Zizzy, the Balls and the Butterflies*, on an Amiga 500. His prize was a JVC video camera worth £600, donated by JVC themselves.

If you're interested in next year's competition, you can get an entry form from the IAC, 24c West Street, Epsom, Surrey, KT18 7RJ. The closing date for entries is 31 January 1994. For details on just what you can achieve with your Amiga in the way of video effects, turn to this issue's special feature, page 12.

Power's RAMming speed

Power up your Amiga 1200 with a new memory expansion from Power Computing.

The company's PC1208 fits into the A1200's trapdoor and can take either a 1, 2, 4 or 8Mb 32-bit SIMM. The board's zero wait state feature ensures that you'll get the best possible speed from your A1200, and its real-time battery-backed clock will enable you to date-stamp all created files. An optional floating point unit, for intensive maths calculations, can also be fitted to the board. It will accept an FPU in either PGA or PLCC form. The board's final feature is that, unlike some others (although we've not come across any that do) it doesn't conflict with the A1200's PCMCIA slot, even when expanded to 8Mb.

Prices range from £70 for a bare board and £115 for a 1Mb version to £465 for an 8Mb board. Floating point units range from £25 for a 68881 clocked at 20MHz to £115 for a 68882 clocked at 50MHz.

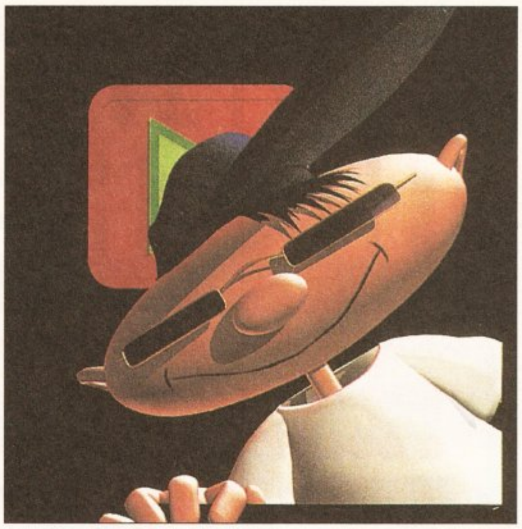
For more details call Power Computing ☎ 0234 843388.

Amigas provide universal language

A computer is being used as the host of a show by the BBC in their latest *It's A Knockout*-style TV programme.

The show is for children in the nine to thirteen age bracket from all over the world. They join together to compete in a variety of outdoor challenges designed to test mental and physical agility, as well as to encourage international cooperation.

The language barrier is broken down by the computer personality Herman, who leads the audience through the game by means of internationally-recognisable symbols and pictograms. Herman was created on an Amiga 4000, with the aid of packages such as *Deluxe Paint IV*, *ImageMaster* and *Art Department Professional*. Called *System '93*, the show runs every Sunday on BBC2.



BBC2's Herman is the latest example of the Amiga's widespread use in television. Isn't he cute?



Most of VideoWorld's backgrounds are, well, backgroundy, but this one is particularly nice.

Background info

A range of high-quality background pictures aimed at video enthusiasts is being released by VideoWorld Multimedia. All of the images are stored as IFF files, in AGA colours and resolutions, although they are available on request for pre-AGA Amigas.

There are currently six sets available, each containing ten disks and selling for £29.99. They are: *Papers*, including parchments, marbled and embossed; *Fabrics*, including silks, cotton and leather; *Textures*, including wood and stonework; *Travel*, including famous landmarks from around the world; *Weddings & 1st Communions*, including parchment, scrolls and flowers; and *Introduction*, which contains a selection of images from the other five sets. You can buy the whole range for £130. Contact VideoWorld on ☎ 041 641 1142 for more information.

STATESIDE



Our American cowboy, Bob Liddil, files the last of his reports from the good ol' US of A.

Well, pardners, it's time for me, like all the best cowboys, to wander into the sunset, a glint in my eye the only indication on my grizzled face of satisfaction at a job well done. This is the last *Amiga Shopper* column I'll be writing; my work here is over.

If the truth be known, the summer of '93 hasn't been a very good one at the Amiga Ranch, USA, except for those buckaroos who are involved with the Video Toaster. If rumors are to be believed, Commodore USA might not be far behind me on the sunset trail.

One rumor has Sony looking at buying Commodore. Given Sony's investment in the motion picture and entertainment industry, that might be a smart move. They have already purchased Psygnosis, a major software player in the Amiga market, and they have the financial firepower to back up a promotional push to bring the Amiga back to the forefront of the industry.

Another rumor has Commodore closing down its US division completely. This is one story that has been getting stronger every day. Considering the level of incompetence displayed by the current administration of Commodore US, it might be a wise move on the part of the parent firm. I honestly believe that Commodore US at present couldn't sell ice in the desert at high noon.

All the signs point toward disaster. Recently, a potential new Amiga dealer in the USA called in for details on how to buy the Amiga for resale. The secretary to the sales rep who sat there discussing the Amiga's bright future was packing the fellow's bags – he'd been sacked the day before. The terms offered to the dealer were so abysmal that he just laughed and hung up the phone. Now he sells IBM clones and they move like Corvettes on the Indi speedway.

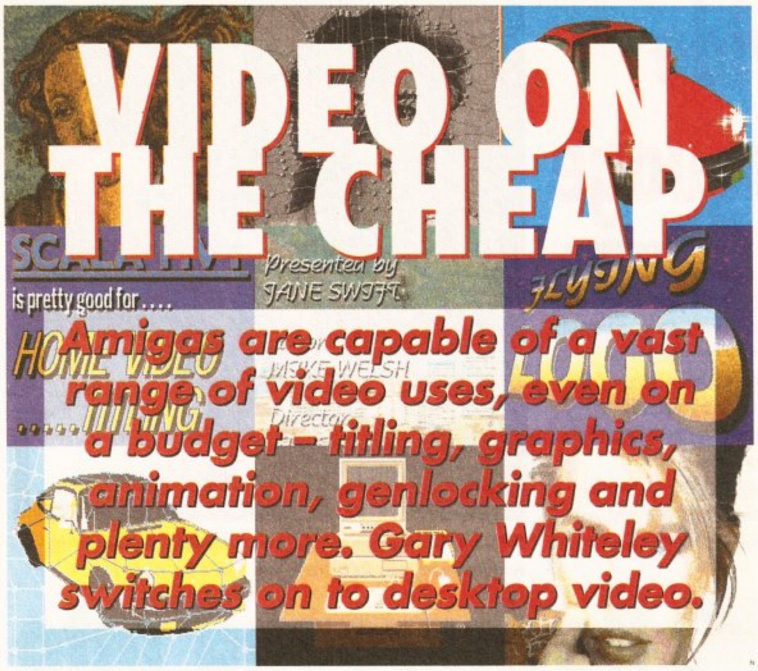
All over America, Amiga dealers are crying out in pain. The computers are moving slowly, company support for dealers is virtually non-existent. Venerable software manufacturers have said, "enough!" and have abandoned the Amiga. Among vendors, only NewTek and companies associated with the graphics, rendering and broadcasting industries seem to have any hope of continuing life for the Amiga.

But whatever happens to Commodore USA, whether they stick it out or fold it up, one thing is for sure – Amiga fans will not forsake their darling. The owners of these magnificent machines will fight for their platform to the last volt of electricity. User groups, independently formed and funded, do not depend on Commodore but rather on each other. I predict that even though the US company is staring the Grim Reaper in the face, they will never die completely. God protects simpletons and children, but I wouldn't say which of these run Commodore USA.

It's time for me to hit the trail and ride. There's just time for one last whoopee-ty-yi-yea and a final, fond farewell. AS

VIDEO ON THE CHEAP

Amigas are capable of a vast range of video uses, even on a budget – titling, graphics, animation, genlocking and plenty more. Gary Whiteley switches on to desktop video.



One of the many outstanding features of the Amiga range of computers is that they can all be used for video work – from the most basic A500 to the most powerful A4000/040. Amigas are in daily use in video studios across the world, as well as in home or hobby productions.

But although it's easy enough to load up *Deluxe Paint IV* and knock out a couple of nice title graphics, what then? What equipment do you need to copy your graphics to videotape? What kind of a monitor might best suit you? Which cheap genlock will get the job done? These questions and many more will be answered in the following pages.

Of course, a bog-standard Amiga 500 cannot do everything a TV studio mixer, frame-grabber and £30,000 worth of kit can do. But there are so many video-related tasks that your Amiga can perform – even if you have to resort to low-resolution or fewer colours if memory is tight.

- **Titling** is one of the most popular video uses for the Amiga, and there are plenty of low-cost programs that work fine on all but the oldest Amigas, plus huge numbers of bitmapped fonts suitable for titling available in the public domain, often costing only pennies per style.
- **Genlocking** enables you to synchronise an Amiga to incoming video signals and generate smooth wipes, fades and dissolves, as well as overlaying Amiga graphics over video images. It's a must for the professional look, but you can get a genlock for well under £100.
- **Morphing** is one of the latest **image-processing** crazes, and there are a couple of PD programs which enable you to try morphing and picture-crunching in the comfort of your sitting-room for next to nothing.
- Then there are the Amiga's legendary **graphics** and **animation** capabilities, and there's always more, from **digitising** to **special effects,** continually becoming more and more affordable.

HOW MUCH IS CHEAP?

Let's get one thing clear. "Cheap" doesn't necessarily mean "free". Like every hobby, video costs money – and could soak up all you throw at it. When you add together the cost of an Amiga, its extras such as disk drives, hard drives, memory, monitor and software, you're already looking at a substantial investment. Throw in one or two video decks, a genlock, a camcorder and a couple more monitors, and you really need to be sure video is what you want to do.

But you've already got an Amiga, plus probably a few of the add-ons that give it more than enough power for video applications, and most households have a VCR, so you're well on the way to the complete set-up. We're here to show you some of the many ways that you can at least get a taste of "Desktop Video" before making an expensive commitment and taking the full plunge into Amiga videography. You

CRASH

Crash editing is a rough-and-ready method of video editing. It isn't particularly accurate, nor is it pretty to do, but it *can* be successful, up to a point. All that's needed are two VCRs (or a VCR and camcorder as source), quick eyes and an even faster finger. A refined method involves using a stopwatch to more accurately judge the edit points. Much of the skill involves judging how inaccurate your video deck is and compensating accordingly, but the procedure is something like this:

Link your VCRs together (both sound and vision – RF if you want), and put your record machine in Pause and Record. It helps if you have a tape in it too. On the source VCR or camcorder, find the first images you want to edit on to the record machine and line up the

HOOKING IT ALL UP

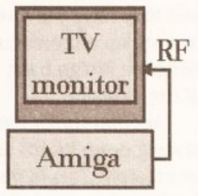
As you'll probably appreciate, there are quite a few variations when it comes to hooking all the various bits of kit together and recording your titles and graphics. With the simplest set-ups it should be pretty straightforward, but things can get a little more complex when it comes to genlocking – especially if you are using more than one monitor. But it's really quite easy, and a little thought and a bit of practice goes a long way.

1. The modulator connection

This is the simplest (and cheapest) arrangement for getting graphics out of your Amiga, particularly if you have an A600 or 1200, since these already have a modulator built in.

Incidentally, if the modulator (or even the Amiga, in the case of the A1200) has a composite video output, you'd be better off using it, because the picture quality will almost certainly be superior to that of the RF signal. The one disadvantage is that all the various parts that make up a TV signal are included in an RF feed – sound as well as vision – and the one simple connection makes it easier to use than composite outputs. But if you can figure out how to connect the various sound and video signals to your VCR and get them to record (I'd advise you to read the manuals) then separate video and sound feeds is a better way to go. Of course this depends on how keen you are on improving your image.

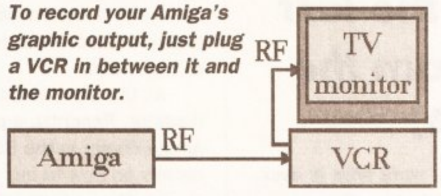
The most basic hook-up arrangement is just to connect the Amiga's modulated output directly to a TV – in which case you'll only be able to see, and not record, your Amiga's output.



The simplest connection for an Amiga set-up – probably the one you're using anyway!

However, it's not much harder to record your graphics. Simply insert a standard video recorder between the Amiga and TV, passing the RF signal into the aerial socket and then out to the TV.

To record your Amiga's graphic output, just plug a VCR in between it and the monitor.



And that's just about as far as a modulated connection can go. Since neither genlocks nor digitisers are capable of using RF video signals there isn't much you can do with them beyond recording them to tape or watching them on TV – but this basic connection does mean that anything you can show on-screen, you can record as well. Instant desktop video! It is possible to crudely edit RF inputs into some kind of sequence (see the panel headed "Crash Editing" above), but there is no scope for any of the fancy tricks that using "real" video signals and genlocks makes possible. So for the really serious possibilities you have to look at genlocks – but that needn't mean an outlay of any more than £50 (see page 14).

2. Composite and YC connections

Composite video is a good all-round compromise between quality and cost. The signals it carries are considerably better-looking than RF, with the added bonus that they can be used to drive genlocks, as well as be recorded directly to tape. The same routings also apply to YC devices – the main difference (apart from the image quality) is that YC signals are carried through two wires instead of composite's one.

Our simplest genlocking setup uses a TV for both the Amiga and video display. The main drawback is that if you're used to seeing crisp RGB output from your Amiga then you will probably be disappointed at the somewhat degraded output you see on the monitor instead. However, this is pretty much par for the course – the RGB signal has to be converted into composite video for recording, resulting in some noticeable quality loss. There are ways to minimise this (see the box headed "Genlocking Hints and Tips" on page 16),

EDITING

start point as accurately as possible. Hit Pause.

Both machines are now in Pause – the recorder in Pause/Record and the player in Pause/Play. The trick is to release both Pause buttons at exactly the same time. The images should then be transferred to the recorder. When the scene is finished hit Pause again on the record VCR, find the next sequence on the source VCR and continue editing. With some practice you can achieve quite reasonable results, though they won't compare to properly-controlled sequence editing.

If your video equipment has the right connections and features you will be better off getting hold of Gold Disk's *Video Director* editing software, which at least will give you a degree of control over your editing.

may find you can do everything you wanted to do without any substantial extra outlay at all!

THE BASIC HARDWARE

The first essential is obviously an Amiga. Some extra memory and a second disk drive will help too.

Then you need a video monitor of some kind. There's a wide range, from the standard domestic TV set to those high-spec multisyncs that will cost you an arm and a leg. For cheapness, a colour TV is probably the favourite all-round solution, especially if you use your Amiga mainly for playing games, but a better choice for video work would be an RGB monitor such as the Commodore 1084 or Philips 8833 models, particularly since they can accept composite video inputs. For more complex video applications it's worth having a second monitor so that you can not only view what's coming off your Amiga but also check the final video recording output.

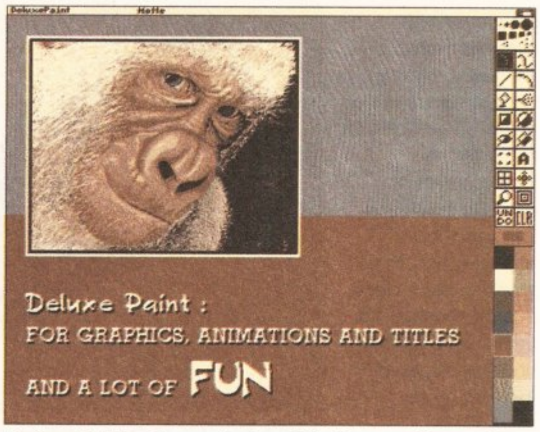
Third, you'll need a video recorder if you want to record your efforts. A standard domestic video deck will do – VHS, Betamax or whatever you can get, as long as it has a video input that can be used with the output from your Amiga, modulator or genlock.

Don't forget some videotape too. Best buy a new tape, and don't scrimp on the tape costs, because although we're talking about video on the cheap there are absolutely no gains to be made from using cheap and nasty tape. All you'll get is drop-out, tape stretch, snagged tape and bad recordings – and, worse still, you could risk damaging your VCR. Cheap tape really isn't worth the risk!

AND THERE'S MORE...

There are some further things that you might need, depending on your ambitions and your Amiga.

If you have an A500 and you use an RGB monitor, you may already be wondering how you can get video out of it when it has no visible video output. There are two solutions: the first is to use a modulator, such as Commodore's own A520 (if you can still find one) or Lola's new L520 "TV Adaptor" (£29.95), both of which can be connected to the Amiga's RGB socket to provide either RF or composite video outputs. A second but more expensive method is to use a genlock, which you'll need anyway if you plan on overlaying titles and graphics over video images.



Deluxe Paint – the mainstay of Amiga graphics, still going strong after seven years and now in version 4.

If you want to use a genlock you'll also have to supply a video signal to it, so a second VCR will be necessary to play back your video footage. This could be either a camcorder or a full-size video deck – it doesn't matter as long as it is compatible with the genlock.

One final piece of useful kit is a video digitiser – a magic box which turns video images into pictures that your Amiga can display and use. If you are a terrible artist, or fancy a bit of fun with that wedding tape of your sister's, a digitiser could be just what you need. More on this later.

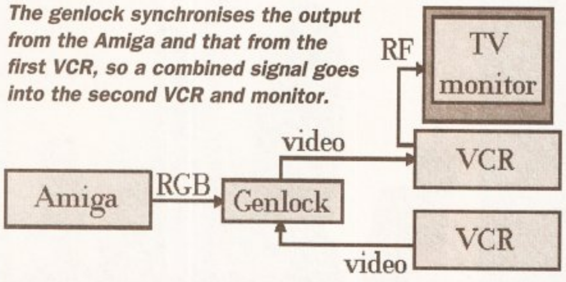
All this seem like too much to scrounge? Maybe you could get together with a few friends (who coincidentally just happen to have some of the video equipment you need) and produce a short film. As well as being a great way of having fun, it could also be an excellent way of learning more about video and graphics – and finding low-budget solutions to your needs.

GOING SOFT

In most cases, good software costs money – though not every bit of costly software is always worth the expense. On the other hand, there are a few programs which cost very little, or are even free. But don't necessarily expect too much from these – they are often quite limited in what they can do.

For most video work you will

The genlock synchronises the output from the Amiga and that from the first VCR, so a combined signal goes into the second VCR and monitor.



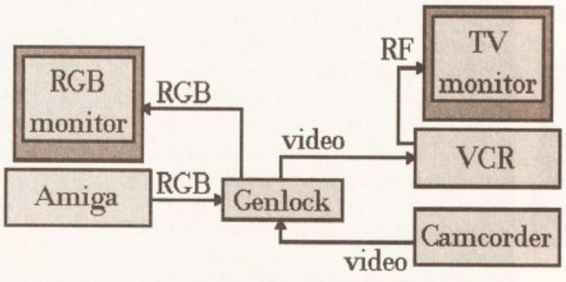
but you can't get rid of it entirely.

A more elegant solution is to use an RGB monitor for graphics preparation, giving you the additional advantage that you can continue graphics production while other video is being recorded via the genlock. Of course an RGB monitor can only be used if the genlock is capable of passing the Amiga's RGB signal through.

The trouble with the previous two configurations is that the cheaper genlocks require continuous video inputs in order to keep the Amiga signal completely stable, so without this attempts at recording the Amiga's output directly from the genlock may not be entirely successful. An obvious solution to this is to provide a video feed at all times. The problem is that this requires a video source – in other words yet more hardware.

The video source could be a camcorder or another VCR. If you were going to genlock titles over video you'd need this video source anyway, so it really isn't an extra unless you only wish to output Amiga graphics. But I'm afraid it's an expense you'll have to bear.

If you just want to make sure that the Amiga graphics record well to tape, try either feeding a video output directly from a camcorder (that is, don't play a tape back, just use the camera's video output) or supply a video out from a VCR which is using off-air television signals. In other words, plug your normal aerial lead into the source VCR as you normally would and take the true video output (not the RF output!) to the genlock. Either way, this will keep the Amiga stable while not inflicting unnecessary wear and tear on the video heads, which is particularly important where camcorders are concerned – unless you don't mind regularly replacing worn video heads, that is.



This set-up gives you crisp RGB output on the first monitor, without the loss of quality in the set-up above.

3. Downstream keying

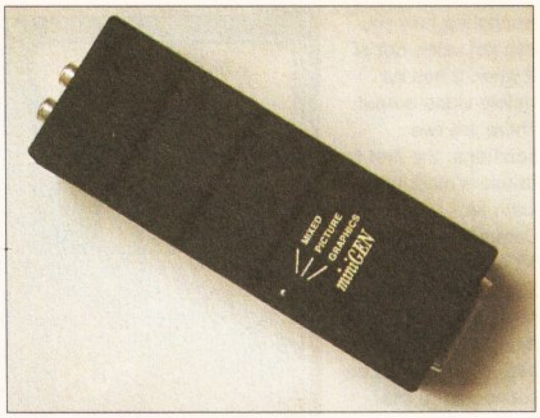
And finally, the downstream keying setup mentioned earlier. I don't expect that you'll be putting a downstream keying titling system together (as in the final hook-up diagram overleaf), but I've included it to show you that genlocks don't always have to be the first port of call for an incoming video signal. In fact, if a vision mixer *is* being used this is usually the best arrangement, since wipes and fades will not affect the graphics overlaid on them, giving your video productions a much more professional feel – which is, let's face it, what often makes or breaks a production.

If the genlock is capable of it the graphics can be faded up and down over the pre-mixed video and, if you are organised enough, a great deal of the hard work can be done in one pass of the videotapes, rather than having to first make a mixed tape and then overlay the graphics on it at a later stage.

By using downstream keying you can avoid a complete generation of copying, keeping the

continued on page 14

require several different software packages, simply because there is no single program which fulfils all the requirements of even the most impoverished videographer. For graphics you'll need a paint package, for titling you'll need a titling package and for even more specialised applications such as video editing you'll need an editing package.



Lola's MiniGen is good value at £50 but lacks an RGB pass-through, so you can't monitor the ingoing signal.

On the graphics and titling side there is no doubt that *Deluxe Paint IV* is the best choice if you can only afford to buy one piece of software. With its wide-ranging abilities to handle fonts, graphics, animation and a number of different screen formats, *DPaint* is an essential part of the Amiga graphics toolkit. And because it is so versatile it offers excellent value, particularly if you manage to pick up an older version cheap – though it's not advisable to go for versions any earlier than *Deluxe Paint III*.

There are one or two PD paint programs available, such as *FreePaint,* though none of them can really hold a candle to *Deluxe Paint IV.* If you are determined to be completely miserly then go entirely for PD – but remember that you won't get nearly as many features. However, if it works for you, then fine, it could be all you need.

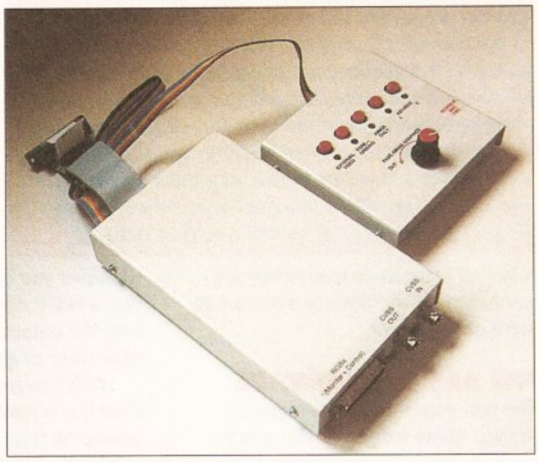
GENLOCKS AND MODULATORS

At the moment there's very little choice of which modulator to buy – there's only one, Commodore's A520, though it is nowadays rather difficult to come by. But help is at hand: Lola Electronics are about to release a new modulator for the Amiga. It's called the L520 and will cost £29.95.

A modulator is only useful for converting your Amiga's RGB signal to either composite video or RF outputs, but a genlock can be much more versatile. In addition to overlaying graphics onto video, a genlock can also be used to output Amiga graphics directly to videotape (just like a modulator). Some of the more expensive YC models can also convert composite video to YC and vice versa, but they aren't cheap enough to mention here.

If you want a genlock at a rock-bottom price then the choice has to be Lola's MiniGen at £49.95. Quality is pretty good and it performs better than some genlocks which cost at least three times as much. The main drawback is that it has no RGB pass-through, though this won't be a burden to those without RGB monitors.

If you want an RGB pass-through, then a second-hand Rendale 8802 is worth rooting out (you should be able to find one for well under £100). If you also want faders for dissolving between Amiga graphics and video, then you'd do well to investigate Marcam's Rendale 8802FMC at £178. Commodore's A2300 genlock (a basic affair at best) is also being sold off very cheaply at the moment – for as little as £50 – though it's only useful in Amigas which have a free video slot, such as the 1500 and 2000. You could also take a look at RocTec's RocGen Plus (£149.95) – it is quite popular, though personally I don't really like the picture quality it provides. The best way is to see it for yourself. Lastly, if you want cheap YC genlocking check out GVP's G-Lock (£299). It has some strange quirks (including requiring you to boot the Amiga twice) but it represents good value since its recent price cut.



The Rendale 8802FMC throws in RGB pass-through plus faders for elegant dissolves between signals.

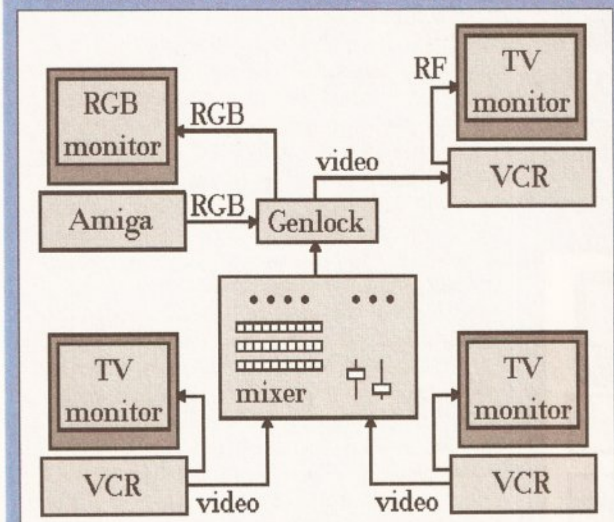
YOUR NAME IN LIGHTS

Once you've got connected – see "Hooking it all up" on page 12 – you can turn your attention to some of the applications you can use your Amiga/video set-ups for. For this you'll require some software to bring

HOOKING IT ALL UP CONTINUED

continued from page 13

quality of the final video recording that much better. But such a set-up requires some considerable financial outlay – not only is a video mixer required, but also some way of controlling all three video machines simultaneously. This means you need an edit controller and maybe even a couple of timebase correctors – none of which could be considered "cheap" by any stretch of the imagination. At least you can see where all this might lead – if one day you get hooked by the video bug.



The ultimate, the pinnacle, the set-up least likely to be called cheap.... "Downstream keying" minimises the number of times a signal is copied – but takes a lot of kit!

4. The connectors

There are one or two things you should remember when hooking up your video and Amiga equipment. The first is to use suitable cables. Don't give in to the temptation to use any old cables that have the right connectors on them. Why? Mainly because using the wrong type of cables will often reduce the quality of your video signals. Audio cables are designed for audio, so don't expect them to perform especially well with video. If you have no choice, you *can* use such cables (there is very little chance that they will cause any damage to the equipment) but remember that they could well affect the quality of your work.

The second thing is not to get confused by the different connectors. It is easy for those new to video to mix up RF and Phono plugs and sockets. I often hear stories of people who've tried (unsuccessfully, of course) to connect an RF output from a VCR to a video input on a digitiser, simply because they thought that the two connectors were compatible because they had a similar fitting – it is an easy mistake to make. Keep your eyes open, and always double-check your connections.



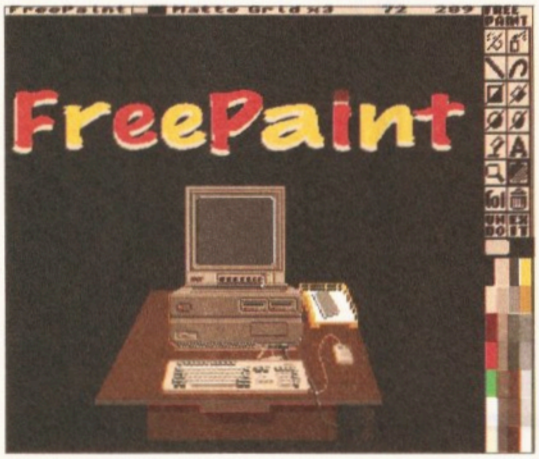
Don't get confused by the different types of video connector, especially if you're new to video. The ones pictured here are (clockwise, from right) BNC socket, BNC plug, RF plug, RF socket, Phono socket, Phono plug, SCART connector, 23-pin D connector (Amiga RGB port).

CAUTION And don't forget that you should have your Amiga switched off if you are making or removing connections to its RGB, disk drive, printer or serial ports. RF and video connections can be made at any time – there's no need to power down.

the computer to life, so first let's look at that most popular of Amiga video uses, titling.

Titling covers a multitude of forms and styles, from the simplest page of text scrawled on a blank screen to complex rolling credits and custom-designed animated logos. There are endless creative possibilities, and many of them can be achieved for minimal outlay.

You may already own *Deluxe Paint* – it has been bundled with many Amiga packs over the years. If you don't, and you're strapped for cash, track down a copy of *FreePaint*, available on Fish Disk 627 from PD libraries (see the directory on page 102) or BBSs. It is very reminiscent of *DPaint*, though it has far fewer features – which isn't a criticism, since it is free software. Most of the basic paint tools are included, though nothing too refined, and *FreePaint* is probably the best non-commercial paint software currently



It might not be in the same league as DPaint, but with FreePaint you can try your artistic skills for nothing.

available on the Amiga – it even has some rudimentary animation functions. Keyboard equivalents are available for many commands and there's even printing included. However, it was written before the new AGA graphics chips were released, so the maximum number of colours available is 64.

So now you've got a paint program, what can you do with it as far as titling is concerned?

GENLOCKING HINTS AND TIPS

• Low-cost genlocks usually need to be fed video at all times, otherwise the Amiga's picture output can become unstable. Incidentally, be wary of formatting disks while a genlock is connected to your Amiga – the incoming video signal can cause slight timing errors which can corrupt the disk.

• Don't expect to get good results if you try to genlock to poor quality video signals, such as those produced by old, worn or bargain-bin VHS tapes. The Amiga's timing relies on synchronising pulses decoded by the genlock from the video signal, so if the signal is poor then the Amiga won't be as stable as it should be.

• Avoid the use of very bright colours in your graphics – deep blues and full reds are particularly prone to smearing. If you must, a thin dark outline around them can often work wonders.

• Use the best quality *video* cables and connectors you can afford. Audio cables are not really suitable and will more than likely cause picture degradation.

• Make pages of text that you can display as titles or credits. If you use *Deluxe Paint IV* you can set them up as an animated sequence and either play them back automatically or preferably control them manually, making sure you can read each page fully before moving on to the next. If you use a paint program that can't animate you could always produce a sequence of frames, turn them into an animation with *Rend24* and play then back with *View* (see pages 19 to 20 for more on these).

• Use *DPaint IV* to make a flying logo, by utilising its **Animation** and **Move** features. (*FreePaint* users will have to skip this one.) Just design your logo (or grab one in and clean it up if you have a digitiser) and then spin it, tumble it or do whatever you like. If you have a genlock you could key the logo over a video image for a better impression.

• Make an animation with *DPaint IV* (or single frames with *FreePaint)* which will first wipe a title on and then wipe it off again. This isn't as difficult as it sounds: for instance, first design your title, then make 21 frames (using lo-res overscan if your Amiga doesn't have too much memory). You'll find that your title has been copied to each of these frames, so all you have to do now is progressively make it look like the title is being wiped on by erasing the title from the first frame entirely and then gradually erasing less as it approaches the middle frame. To make it disappear again, just wipe over the title bit by bit until you have a completely black final frame. You could even design your own wipes.

• A variation of the previous method is to use a "scratchback" technique to make your text or titles appear letter by letter, building up from nothing. This involves some simple calculations. First type out your text, and arrange it as you wish. Count up all the letters and spaces and then set up the number of frames to correspond with this total, plus a few extra frames for safety. Go to the penultimate frame of the sequence and erase the last letter on the page. Move back another frame towards the start, erase the last two letters, then move back another page and remove the last three letters. Continue in this vein until you reach the first page of the animation, by which time you should have removed all the letters. If you come to a space, treat it like a letter and "remove" it too. When you come to play the animation back you should see a Teletype effect as the text appears on screen letter by letter and line by line. Effective, if time-consuming.

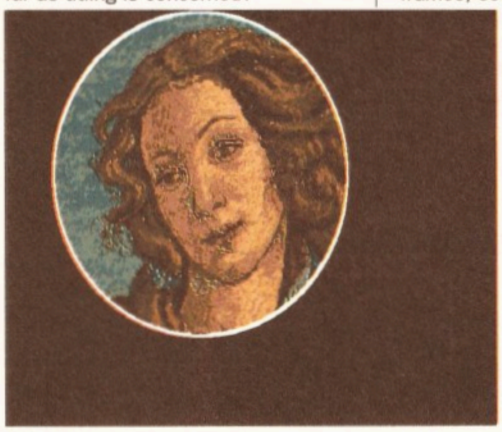


With Deluxe Paint IV you can create a flying logo that actually does what it says – spin, tumble, whatever.

THE REAL THING

Good though *Deluxe Paint IV* is, for moving titles it can't compare to most of the commercial titling programs for the Amiga, and even the PD ones leave it standing when it comes to scrolling text – which is, let's face it, the most popular style for displaying credits on film and TV programs. To do these kind of effects you need to turn to more specialised titling software.

There are quite a few titling programs – some are PD, most are commercial, but all offer features that cannot be found elsewhere. The cheapest are obviously of the PD variety, and a couple are worth particular mention: *Video Titles* and *VideoLab* – both written in AMOS. Of the two *VideoLab* offers more



Make an animated mask using Deluxe Paint...



... and combine it with a graphic using a genlock...



... to produce your own custom wipe patterns.







The three common ways of moving text on screen: ... scrolling (vertical), crawling (horizontal)... ... and subtitling, all achievable with PD programs.

flexibility, enabling both vertical and horizontal scrolling, backgrounds, shadows, speed variation, text importing, various text styles, with fade and cut effects thrown in for good measure. It certainly works, though my Workbench 2.1 Amiga had a few problems coping with it. It performs fine on WB 1.3 machines though, and probably 2.0 as well, but I won't swear to it. Its scrolling is a bit jerky with larger fonts, but for £3.50 *VideoLab* presents an ideal introduction to video titling.

Video Titles is rather simpler, allowing just scrolling and no other fancy stuff beyond its own user interface. It's basic, but just about usable, and again it costs £3.50. I'm told a revised version is planned, but when this might appear is said to be anyone's guess.

There are other PD programs, including *TitleGen* and *SportsText*, offered by PD houses as video titling programs but frankly they are pretty grim affairs, dating back almost to the dawn of the Amiga, and most of them should have been put out to grass long ago.



Scroller2 has all kinds of features to make scrolling that bit more exciting than using BAS!

The best-value commercial scrolling software still seems to be the Soft Alternative's *Big Alternative Scroller (BAS)*. Although it's been knocking around for a few years and offers no multitasking and no hard drive loading, it still works fine – smooth scrolling and crawling, a good variety of typefaces and a choice of colours, text justification and speed control. Not bad for £40, especially considering that it works on virtually any Amiga.

If you want something a little more sophisticated the next step up is the recent revision of *BAS – Scroller 2* (£80). It offers more typefaces, better font control and layout, a convoluted ability to incorporate graphics, and more control over presentation and timing. In many respects it is a superior program, though it retains some of the quirks of *BAS* and it still doesn't multitask or run from hard disk. Still, *Scroller 2* does the job and it looks good too, so why not give it a go?

If you want something that does rather more than scrolls and crawls you should consider *Scala HVT* (HVT = Home Video Titler), the lowest-priced of the Scala range of multimedia and titling programs. It offers a whole range of features from text transitions to wipes and other screen transitions. It can use IFF images for backgrounds (though extra memory is handy here) and incorporate brushes into presentations. Note the change of emphasis here – *Scala HVT* is a "presentation" program, which means it does somewhat more than a video titler, even if it can't scroll as smoothly as either *BAS* or *Scroller 2*.



Scala HVT provides a low-cost entry into DTV presentation suitable for low-end Amigas.

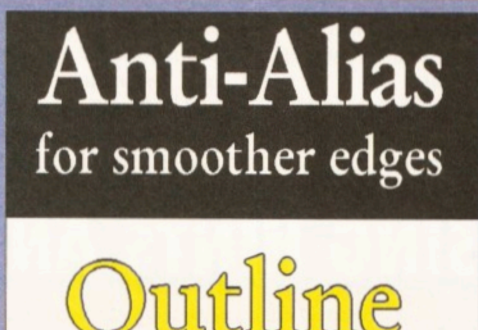
As far as costs go, *Scala HVT* probably represents the zenith of low-budget titling software (if you

GETTING YOUR CREDITS TOGETHER

As a final word on titling and credits here are a few tips which will help you do a better job with those all-important name-checks.

• Before you actually start generating the titles on your Amiga make a list of everyone concerned and decide what order their credits will run in. This is important, because it can often be awkward to change your running order once you've laid it out. Maybe you'll want to keep the technical jobs (camera, sound, editor, etc) together, and certainly the film's thespians should have their own block of credits. Whether the director and the "stars" get larger credits is entirely up to you – and the egos of your leading players. A well-drawn up list will save a lot of arguments at the end of a production.

• Don't use garish colours unless it is absolutely necessary for artistic reasons: bright reds, blues and greens tend to look nasty on video – at least at the VHS level. Use lighter shades – yellows and whites – and put dark outlines around them if colours start looking smeared.



Use antialiasing to smooth out the edges of your text, or outlining to sharpen its edges when genlocking, especially on bright backgrounds.

• Keep it simple – the idea is to credit the participants, not give the viewer a headache. Two text colours and a shadow colour are often all that is required.

•. Use lettering which is large enough to be easily read some distance from the screen. There's no point in using very small text because the lower-end video formats (in particular VHS) will have trouble resolving it properly. Avoid typefaces which are very decorative or have thin lines in them – these often won't work well either.

•. Make sure that you can comfortably read the text at least twice while it is on screen. There's no point in having a credit list if no-one can read it. This applies particularly to text that is scrolling or "crawling" (scrolling sideways).

• If you are going to genlock the titles over a video image, don't forget that the background of the titles should generally be produced in palette colour 0. Some titling programs do this automatically, but do check.

consider around £80 low-budget). However, this is cheap for all the features it has, and the added flexibility it brings to video titling. Even if you just want to do fancy things with text, *Scala HVT* can be a great help – it has all kinds of nice layout features, bold, italic, underline, tabbing, shadows, 3D look, easy cut and paste, outlines, palette control and more.

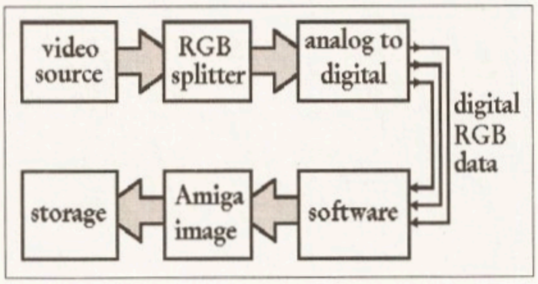
So, in order of overall low-budget titling usefulness the first choice has to be *Deluxe Paint IV* (even though it can't scroll), followed by *Big Alternative Scroller, Scala HVT* and *Scroller 2*. But don't forget *VideoLab* and *Video Titles* if you want "no budget" software.

DIGITISING

Being able to grab images from a videotape or camcorder can be really useful. Photographs, video clips and live scenes are all within the grasp of even the low-budget Amiga videographer. With good-quality digitisers now costing as little as £70 it's really quite easy to get started in this fascinating field.

What can digitising be used for?

- Grabbing a picture to use as a background in an animation, as part of a morphing sequence, or for use in a graphics or desktop publishing program.
- Capturing a series of frames which could form the basis of an animation. The frames could either be used directly or be traced over in a paint program to provide a new set of images – a procedure known as Rotoscoping.
- Digitising a logo or graphic for conversion into a 3D object.



Here's what happens when an image is digitised.

HOW DOES IT WORK?

All digitisers convert video into the digital data needed by the Amiga. They do this by first splitting the colour video signal into its red, green and blue components – usually by means of an electronic colour splitter, though not always. The RGB data is then passed through to the Amiga, often via the parallel (or printer) port and converted with the digitiser's software into IFF or other Amiga-compatible images. It is a process which can take just a split-second in the case of the more expensive "fast scan" models (which use special memory areas called Framestores to temporarily store the video images) but this kind of digitiser costs from £300 upwards, so we'll not pursue them any further here.

Rather, we'll turn to the cheaper, though no less rewarding, "slow scan" digitisers. One slow scan digitiser stands head and shoulders above the competition (not that there are many to choose from). This is Rombo's Vidi Amiga 12, which can be had for as little as £80 and offers superb value for money. It accepts both composite and YC video (for better grabs) and can operate in all the Amiga's graphics modes, including AGA. It grabs pretty quickly in colour and virtually instantly in black and white, which makes it suitable for grabbing monochrome sequences direct from videotape. It even uses the Amiga's screen as a monitor, so you can see what's happening with the incoming video In fact, it really is the king of cheap digitisers. Even the image quality is good – though this of course depends on the quality of the images you feed it.



When it comes to low-cost digitising, Rombo's Vidi-Amiga 12 takes the honours for as little as £80.

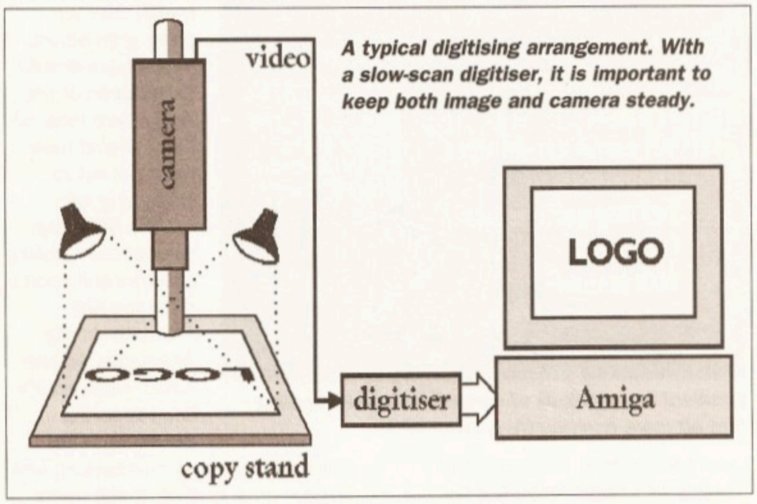
Vidi Amiga 12's closest competitor is the new "real-time" Vidi Amiga 12 RT, which costs about £100 more, but I feel duty bound to mention the original Amiga digitiser – NewTek's DigiView Gold. It's more than a little cumbersome these days, but it can still turn in a nifty-looking grab if you have the time to spare. But it's a purely monochrome digitiser, meaning that to get colour results you have to use either an electronic colour splitter (if you wish to input colour video) or a set of colour filters (for use with black and white video cameras).

You don't see DigiView advertised much nowadays (though you can find it for as little as £60) but if you want *very* cheap digitising check out your local second-hand computer shop and see if they have one. It's just a bit on the slow side and it doesn't support the new AGA modes, but a second-hand DigiView is still good quality could be a real bargain if you're skint.

DIGITISING – THE BAD NEWS

Now that you've read the good news on cheap digitisers, here's some that's not so hot. Digitising from videotape with a slow scan digitiser requires that the video deck has a rock-steady pause. The reason for this is simple: a slow scan digitiser takes a longer time to grab than the 25th of a second each single video image (or "frame") is displayed for during normal playback. The upshot is that the frame you want to grab must be frozen for long enough for the digitiser to fully capture it, and an ordinary pause won't be stable enough. The frame will start to "tear up" as it is grabbed, adding noise and other garbage as well as probably becoming quite distorted. The only solution is to use a VCR which has a good freeze-frame facility.

Of course this isn't such a problem if you are grabbing static images, such as photographs, via a camcorder or other video camera, because the image should remain still for the duration of the digitising process anyway – so long as both the camera and photo are securely mounted, and cats, small children and clumsy adults are kept well away while digitising is in progress.



A typical digitising arrangement. With a slow-scan digitiser, it is important to keep both image and camera steady.

DO THE ANIMATION

We've already mentioned the uses of animation for titling, but that's not the end of it as far as DTV applications are concerned.

Every cartoon you've seen on film

DIGITISING HINTS AND TIPS

- When using a camera ensure that sufficient evenly-distributed light is used to illuminate the subject. Low light usually results in grainy grabs. Uneven lighting produces "hot spots", where the image seems to burn out or be too bright.
- Grab at the highest possible resolution to get the sharpest images. If you run out of memory (usually a low Chip memory problem) you can reduce either the resolution, the number of colours being used or both – or alternatively, if you have no memory other than Chip RAM installed, add some Fast RAM, preferably at least 2Mb, because this will reduce the burden on the Chip RAM and enable you to grab larger, higher resolution images.
- If the camera has a white balance control make sure you use it. Before digitising, but with all the lighting turned on, put a clean piece of plain white paper under the camera so it fills the screen. Perform the white balance and then shoot your images. The colours of your grab should now look more natural.
- Remember that a video camera or digitising program cannot really hope to improve the quality of the incoming image – the old "Garbage In, Garbage Out" axiom applies as much to digitising as it does to any other area of Amiga video and computing generally. If you want good grabs, you must start with clear images.

VIDEO FORMATS

As far as Amiga video is concerned there are four main types of signal – RGB, RF, Composite and YC. The Amiga's internal format is RGB (Red, Green and Blue), which refers to the basic building blocks used to build a TV picture out of light. RGB is also the purest signal, requiring no conversion or treatment to work with an RGB monitor – which is why RGB monitors have the best quality displays.

However, RGB television displays are rare, with a compromise being devised in order to squeeze the amount of data down to something a little more manageable. This explains why RF video is used for TV transmissions, and because of its efficiency (if not overall quality) it is used as computer output for some of the "games-oriented" Amigas such as the A600 and A1200. Of course this also helps to keep the price of an Amiga system down by allowing the user to hook up to a standard TV set instead of having to buy an RGB monitor. RF TV signals carry both picture and sound. They are suitable for video recording and display, but they cannot be genlocked, vision-mixed or digitised.

Composite video is better quality because it consists of picture information only, so the compression isn't so extreme and, as a result, the quality loss when recording to videotape or decoding for TV display is substantially less. It is still the most popular video signal format in use for video editing, though most broadcasters and many video houses are now using more efficient (and hence better quality) signals such as YUV and RGB. Composite video can be used by VHS, Betamax, U-matic and other video systems.

The final signal we're concerned with is YC, which offers better quality than composite because it is even less compressed, since the brightness (Y) and colour information (C) are kept separated. The result is that less decoding is required, hence less quality loss, hence a better picture. YC is used in S-VHS and Video8 systems.

To round off video signals I must mention interlacing, which is how a TV displays its image. By rapidly alternating one set of horizontal lines with a second set (termed "odd" and "even" fields) every 50th of a second, a whole "frame" is displayed. The reasons for this are too technical to go into here, but the crucial thing to Amiga videographers is that very thin lines, when displayed in interlaced modes on the Amiga, tend to flicker as they are caught between fields, as it were. Don't turn off the interlacing, just use slightly thicker lines.

or TV, every bit of animation in a commercial, all of it tricks us, for animation is an illusion based on fooling the eye and brain into thinking that a series of separate images are in continuous smooth motion – even though they aren't.

Traditional animators have known this for years, producing a separate image for every frame of film or TV, along with backgrounds and special effects – that's around 1,500 individual frames for every minute of animation, which is why companies like Disney use huge teams of artists to get the job done.

But the advent of affordable computer power has brought many changes. 3D realism is now possible and high-quality computer graphics are becoming more and more common in film and television, not just in high-cost flight simulators and military applications. Even so, such computer-generated animations are still based on the old illusion trick.

There are two main kinds of computer animation – 2D, such as that produced by paint software, and 3D, as generated by 3D modelling and rendering programs.

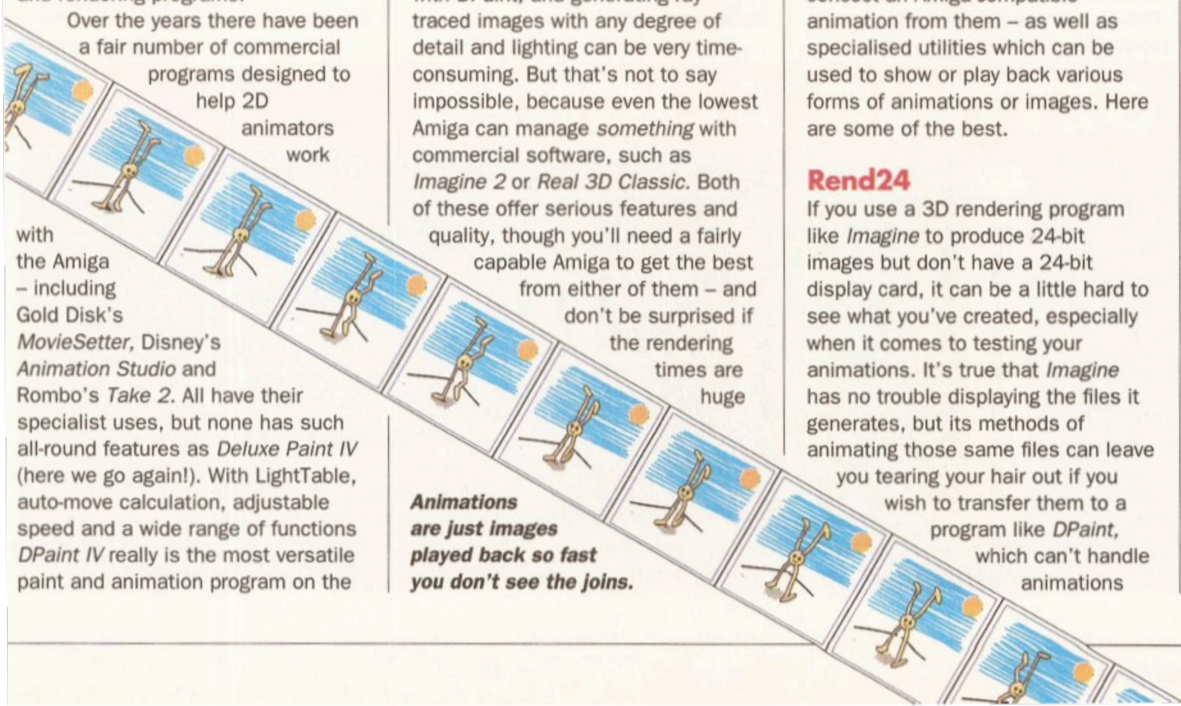
Over the years there have been a fair number of commercial programs designed to help 2D animators work with the Amiga – including Gold Disk's *MovieSetter*, Disney's *Animation Studio* and Rombo's *Take 2*. All have their specialist uses, but none has such all-round features as *Deluxe Paint IV* (here we go again!). With LightTable, auto-move calculation, adjustable speed and a wide range of functions *DPaint IV* really is the most versatile paint and animation program on the Amiga – bar none.

The other programs are rather more specialised. *Take 2* (now only £49) enables you to choreograph your pre-produced animation frames, layer background and foreground actions, add sound effects and play back animations. It is an ideal program for line tests, storyboarding and even professional productions, but it can only use pre-made frames, so you'll also need a paint program, digitiser or both.

Disney Animation Studio (£80) provided a comprehensive package (which is quite old now) but was let down both by its modular approach and non-standard formats, which is why it never really caught on.

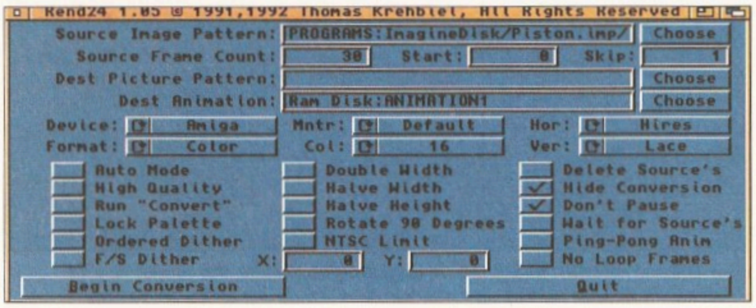
MovieSetter (£80) is also rather long in the tooth, but it made animation quite easy once the basic characters and backgrounds had been designed. Both *Moviesetter* and *Disney* are worth looking for in the bargain bins, but I'm not sure whether either will work with the more recent Amigas.

3D animation production is even more demanding than 2D animation with *DPaint*, and generating ray-traced images with any degree of detail and lighting can be very time-consuming. But that's not to say impossible, because even the lowest Amiga can manage *something* with commercial software, such as *Imagine 2* or *Real 3D Classic*. Both of these offer serious features and quality, though you'll need a fairly capable Amiga to get the best from either of them – and don't be surprised if the rendering times are huge (like 15 to 20 hours per image!) in some cases. To be honest, 3D isn't really a DTV process which can be done on the cheap – at least not with any great success. *Real 3D Classic* could set you back perhaps £110 and *Imagine 2* about £80 if you shop around a little.



Animations are just images played back so fast you don't see the joins.

As far as PD animation software goes, there isn't any as such. But there are animation *utilities* – programs which don't directly produce animation frames but do enable you to take a series of images (such as those generated by a 3D program or digitiser) and concoct an Amiga-compatible animation from them – as well as specialised utilities which can be used to show or play back various forms of animations or images. Here are some of the best.



Isn't it amazing how some of the dullest-looking programs have the most interesting uses? Rend24 can convert image formats and much more.

Rend24

If you use a 3D rendering program like *Imagine* to produce 24-bit images but don't have a 24-bit display card, it can be a little hard to see what you've created, especially when it comes to testing your animations. It's true that *Imagine* has no trouble displaying the files it generates, but its methods of animating those same files can leave you tearing your hair out if you wish to transfer them to a program like *DPaint*, which can't handle animations with different colour palettes for each frame – which is exactly what *Imagine* produces. One solution is to buy a program like *Art Department Professional*, convert all the images so they use the same (locked) palette and Amiga-displayable screen format, and then animate them together. This is not only rather round-about and time-consuming, but also expensive. With a program like *Rend24* it becomes a breeze.

Rend24 (version 1.05 is the latest) can do many things – batch convert JPEG, GIF and IFF files to various other colour and greyscale IFF formats, scale images to new sizes, convert them to DCTV and HAM-E formats and turn a sequence of images (which don't even have to have the same formats or dimensions) into an ANIM5 animation – with or without locked palettes. It can even be told to wait until an image has been rendered before processing it – ideal if you are leaving a long 3D render overnight and want to see how the animation is shaping up in the morning. *Rend24* will gather the images as they are produced, process them and then save the resulting animation or image sequence ready for viewing. *Rend24* is shareware, with a recommended fee of US$30. It requires AmigaDOS 1.3 minimum and at least 1Mb of Fast RAM when using 24-bit images.

Rend24 has an easy-to-use

interface where most of the work just involves pointing and clicking with the mouse. There are one or two caveats though – most importantly that when you're working with batches of images they should all be named **File001, File002,** etc – a naming convention that not all programs follow. One excellent way around this is to buy Alternative Image's *Reverser* program.

ViewTek

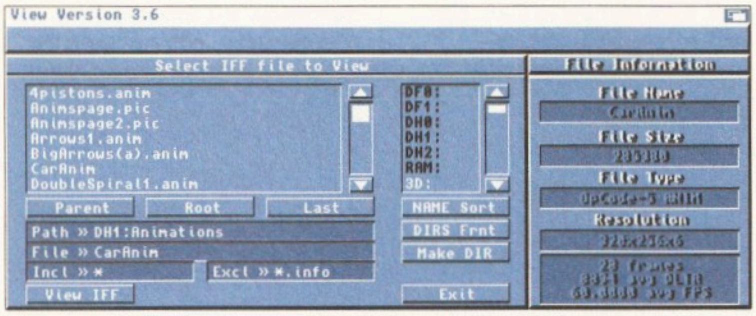
By the same author as *Rend24, ViewTek* (latest version 1.04) is primarily a viewer for IFF pictures and animations and JPEG and GIF images, though it also has a CLI option for saving *ViewTek's* output as IFF images. It is very easy to use – simply choose an image from the requester or type the name in the CLI, and so on. Personally, I run it from *Directory Opus* to view JPEG and GIF files quickly. It isn't the best converter around *(Rend24* is much better) but it *is* fast. In other words it is "QUAD" (QUick And Dirty). It does, however, support AGA graphics modes wherever possible and is especially useful because it plays back animations.

Bundled with *ViewTek* is a program called *MakeAnim7,* which converts animations in the earlier ANIM5 format to ANIM7 format. Simply select an ANIM5 animation and sit back as *MakeAnim7* rapidly does the conversion. The result – an animation which plays back noticeably faster, and more smoothly, than it did when it was ANIM5. And guess what? *ViewTek* can play back ANIM7 (as well as ANIM5) animations. It also has extensive controls for changing the playback speed – which may be as fast as 60fps (frames per second) under the right circumstances. Since *ViewTek* is freeware, what have you got to lose? It does require AmigaDOS 2.04 or greater; and note that ANIM7 isn't an "official" Commodore-approved format – they favour ANIM8 – not that that should put you off.

View

View is a viewer for most ILBM/IFF file types and the latest release (v3.6) includes support for both AGA graphics and ASDG's ANIM8 animation format. It can also play back ANIM5 and ANIM6 type animations, as well as display SHAM and DCTV images. It is very easy to use, has speed controls for animations and is very fast – and I highly recommend it. Its previous version served me faithfully for well over a year.

Although outgunned by some of *ViewTek's* features, *View* is a program you should definitely have if you use animations or need an easy-to-use picture viewer. *View* is freeware and requires AmigaDOS 1.2 or greater.



View is an invaluable utility for viewing images (hence the name) in just about any common format and playing animations – and it's freeware!

MainActor

This is a very recent, and rather powerful, program (latest version 1.1) which makes short work of compiling animations. It can load and save IFF pictures and ANIM5, ANIM7_16, ANIM7_32, ANIM8_16 and ANIM8_32 animations formats, as well as being able to load PC-style PCX format files. More formats (including JPEG) are being planned for a future release. Also included is a player program which can be used to play back any animations produced with *MainActor,* so long as your Amiga can handle the screen formats correctly.

The first version (1.0) was fully working (though with fewer features) but this version has its Save functions disabled. Register (for $50) and you'll receive a "key" to fully activate the entire program. I believe *MainActor* needs at least AmigaDOS 2, though the docs make no mention of this.

Reverser

Finally, a program which I can't praise enough (no, not *Deluxe Paint IV!)* – Alternative Image's *Reverser.* Cheaper than some shareware, this

continued on page 24

AMIGA SCREEN FORMATS

Over the years the number of different Amiga screen formats has been slowly enhanced. We still have the original innovator – HAM (4,096 colours) – and the basic modes from 2 to 64 (extra-half-brite) colours, but with the advent of AGA Amigas you can now include 256-colour and HAM-8 (262,000 colours) as well. If you have a display card such as DCTV, OpalVision or IV24 then the number of colours available is considerably more – from several millions right up to "true colour" 24-bit with 16.7 million available colours.

Using these colours, on the other hand, can be a headache if your Amiga is short-staffed in the Chip RAM department, since this is where decisions are taken about how large a screen can be made available and how many colours it can use. Large screens such as the overscan ones required for video need a lot of Chip memory, so you might find restrictions on the number of colours available for use. In any case, pre-AGA machines cannot use more than 16 colours in hi-res interlace modes, and overscan can often reduce this to eight on severely under-endowed Amigas. The size of an image also affects the speed at which an animation can play back: lo-res anims, or smaller sized images, play back faster than hi-res ones. Anims with more colours are also generally slower. Even so, the Amiga is still one of the best-value video production tools available.

Video work usually requires *overscan* screens – that is, screens which overlap beyond the edges of the visible display. This ensures that any movements which take place from off-screen to on-screen do so smoothly and don't appear to "jump" on-screen in a disturbing way. Text will scroll on smoothly from the very bottom of the screen, rather than part way up, or crawl in correctly from the side.

Solutions to the Chip RAM bottleneck include adding more Chip RAM (logically enough, though this can be both awkward and expensive), adding more Fast RAM or choosing to use fewer colours. You should also make sure that any unnecessary tasks are closed down, your Workbench screen is in the minimum number of colours and at its smallest size, and you don't have a backdrop in use. If you can't afford to add more memory, consider using lower-resolution screens. Although your text and graphics will inevitably look chunkier, you'll at least avoid breaking the bank.

GETTING ALIGNED

Setting up your video monitor correctly is very important, because it is your "eyes" as far as video and graphics are concerned. You should always try to ensure that your monitor is kept set up in the same way – with the colour, brightness and contrast settings all correct – so that you'll know if anything is wrong with your video system and so that any colour corrections you might make will be fully appropriate.

The best way to set up a TV or monitor is to use a standard Colour Bar screen. Colour bars should always be included right at the start of your video tapes so that the monitor can be adjusted if necessary, but you can generate colour bars on your Amiga to use as well. Here's how:

You'll find that these Colour Bars are much closer to the real thing than most of the so-called "Test Patterns" supplied with some titling and video programs, since these are mainly sloppy approximations of what their designers *believe* to be correct. All the colours here have been carefully checked against electronically-generated bars and are as close as the Amiga's RGB palette system will allow. Note that these bars could be improved on with AGA and 24-bit machines, but are so close that the differences won't be noticeable for our cheap video purposes.

Use an overscan screen and divide it into eight equally-wide vertical strips of colour in the order shown. Use the bars to adjust your monitor to ensure that black and white really are black and white and the colours are of the correct hue.



Make your own colour calibration bars using a paint program and the RGB values shown.

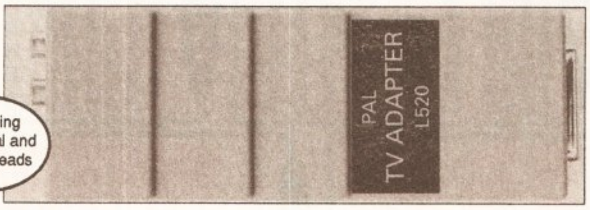
AMIGA VIDEO
from LOLA

miniGEN genlock *buy direct at only* **£49.95** inc. VAT and p & p.



"may not look much but sure can perform" Amiga World

TV MODULATOR *only* **£29.95** inc. VAT and p & p



including TV aerial and Audio Leads

Connects A500 etc. to TV, VCR and Composite Monitors.
Allow outputs to be recorded by VCR

Accessories: Modulator extension lead plus other video lead kits available - send for list

PROFESSIONAL MINIGEN L1000 £149.95 *Just released*

★ RGB Throughport ★ Crossfade slider ★ BNC Connections

For information on all the above please write or phone

LOLA ELECTRONICS LTD.
FREE POST
MARKET HARBOROUGH
LEICESTERSHIRE LE16 7BR

☎ 0858 880182

12 month guarantee, 14 day full refund. Designed and manufactured in the U.K.

Nexus Pro™
Background Picture Sets

High Quality AGA Colour IFF Pictures, perfect for videotitling! Work in all Amiga Paint and Presentation Packages (DPaint, Scala, etc.)
(Also available for Pre-AGA Amigas on request)

Set One : Papers
Various paper types, including parchments, marbled, embossed.

Set Two : Fabrics
Varied fabric backgrounds including silks, cottons, leather, etc.

Set Three : Textures
Various textures including woods, stonework, etc.

Set Four : Travel
Including famous landmarks from around the world, perfect for use as chromakeyed backgrounds or for holiday video title backgrounds.

Set Five : Weddings and First Communions
Including parchment, scrolls, flowers, romantic backgrounds, etc.

Set Six : Introduction Pack
A compilation from the previous sets, ideal for new users.

Each 10 disk set is available at a cost of only £29.99 inc. P & P. or buy the whole range for only £130.00.

Send cheque or postal order made payable to :
VIDEOWORLD, 8 Ardoch Gardens, Glasgow, G72 8HB.
Telephone 041 641 1142 for more information.

...B&T Fonts....B&T Fonts....B&T Fonts....B&T Fonts....B&T Fonts....B&T Fonts...

ATTENTION
ALL DESK-TOP PUBLISHERS & Workbench 2 or 3 owners

UNBEATABLE QUALITY

Superb Value For Money

Do You Own ?

DPaint 4.1* Professional Page Pagesetter
Wordworth 2 Pro-Draw PageStream
TV Text Pro* Final Copy II release 2 Scala MM *
Art Expression

*denotes Workbench 2 or 3 required

If so, we can supply you with a SUPERB RANGE OF SCALABLE COMPUGRAPHIC, ADOBE TYPE 1 or WORKBENCH 2/3 TYPE fonts.

STANDARD SERVICE
SPECIAL OFFER
Pre Compiled Font Disks
(contain 10 fonts)
£2.00 per Disk, or 10 Disks for £18

B&T Fonts
78, Foresters Tower,
Woodfarm Road,
Headington,
Oxford.
OX3 8QA
Tel. or Fax
(0865) 744578
Ask about our PREMIER SERVICE

SELECT SERVICE
SPECIAL OFFER
Choose Your Own Fonts From Our Catalogue
30p per Font , or 100 Fonts for £25

.....PLEASE RING OR WRITE FOR YOUR FREE CATALOGUE.....

SINGLE FRAME AMIGA ANIMATIONS TO BETA-SP
TRANSFERS TO S-VHS, HI-8, VHS & VIDEO-8

Shakti will single frame transfer your *AMIGA* IFF animations to a high quality Beta-SP format for as low as £40. per 250 frames including tape stock and one duplicate in the format of your choice. 24-Bit and JPEG animations transfered for as low as £55. per 250 frames. Animations can be sent to us on most media storage including Syquest, Laser Optical 128 or 650 megs. as well as DAT and other tape back ups. We can transfer from 3.5 disks when needed. Emmy Award winning SHAKTI has the expertise and professional systems to make your creative animations reflect their full production value. Full Beta-SP Editing and many other services available.

Shakti

IFF ANIMATIONS:
Minimum order £50. (250 frames or less)
250-500 frames £4.50 per each 25 Fr.
500-1000 frames £4.00 per each 25 Fr.

24 BIT& JPEG:
Minimum order £65. (250 frames or less)
250-500 frames £6.00 per each 25 Fr.
500-1000 frames £5.50 per each 25 Fr.
VAT INCLUDED

shakti media productions / carrick house
west loch, tarbert, argyll, scotland pa29 6yf
TEL / FAX 0880 820084

MEMORY EXPANSION

1Mb x 1	- 80ns		DIP	4.75
256 x 4	- 80ns		DIP or ZIP	4.75
1Mb x 4 (44C1000)	- 80ns	A3000	ZIP	16.04
1Mb x 4 (44C1000)	- 80ns	Static Col	ZIP	16.04
1Mb x 8	- 80ns		SIMMs (GVP)	34.08
4Mb x 8	- 80ns		SIMMs (GVP)	129.25
4Mb (32)	- 60ns	COMBO	64 Pin	170.37
4Mb (32)	- 70ns	4000/30	72 Pin	141.00

MEMORY MADNESS! PLEASE CALL FOR LATEST PRICES

Please phone for the latest prices. VAT included. Delivery £4.70.

KINGSWAY UK LTD

Phone: 0923 836473 **Fax 0923 836474**

18 Foxfield Close, Northwood, Middlesex HA6 3NU

AMIGA PRESENTS VGA FOR YOUR AMIGA

~~DOUBLE YOUR SCREEN RESOLUTION~~
~~DOUBLE YOUR SCREEN RESOLUTION~~

From 640 x 256 to ***640 x 480*** without Interlace!! ***640 x 960*** Interlaced!!

THROUGH PORT CONNECTION FOR CGA - VERY EASY TO USE
ADVANCED SCREEN DRIVING SOFTWARE INCLUDED
FULL TECHNICAL SUPPORT TELEPHONE HOTLINE

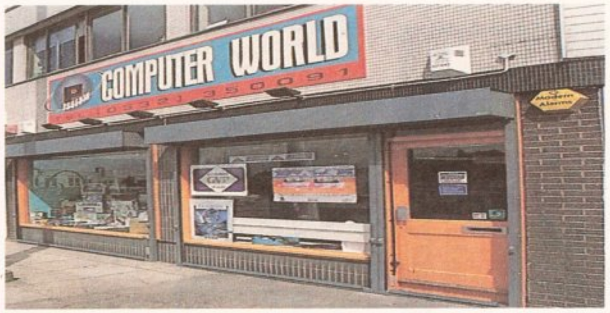
INTRODUCTORY OFFER ONLY £24.99 INC VAT

UNIQUE HARDWARE ADAPTER
COMPATIBLE WITH 500, 500+, 600, 1200, 1500 AND 2000 AMIGAS
(Provided your machine has a super denise fitted and nearly all machines have)
COMPATIBLE WITH KICKSTARTS 1.3 2.04 AND 3.0

PHONE FOR DETAILS ON **0703 511164**, FAX ON **0703 771069**
OR WRITE TO **AMI.VGA, 292 SHIRLEY ROAD, SHIRLEY, SOUTHAMPTON, S01 3HL**
(Please allow five working days for delivery)

This amazing device is guaranteed to work with all Operating System legal software but also functions with some software that uses its own display driver routines. Commercial Games software is not guaranteed to work in VGA Mode. You will need a standard VGA or Multisync Monitor to use this product.

PHOENIX COMPUTER WORLD



Commodore SPECIALISTS

Free FAST! UK DELIVERY • SAME DAY DESPATCH* • All prices INC. VAT

COMPUTER WORLD-WORKING TOWARDS BRITISH STANDARD BS 5750 FOR QUALITY & SERVICE

Canon · GVP Great Valley Products · CITIZEN · Hewlett Packard · Panasonic Printers · star Micronics · LOGITECH · SONY · Canon · GVP Great Valley Products · CITIZEN · Hewlett Packard

AMIGA CD32

NEW

CBM's salvation?? - The worlds first 32-Bit CD games system has been released and is sending shock waves through the industry!! Based on the 68020 Processor and sharing the same chip set as Commodore's Flagship, the A1200, it looks set to become a major force within the home computing environment.

FEATURES INCLUDE: A4 size footprint • 2Mb 32-bit graphics • 128K flash memory (storing high scores) • built-in workbench • plays audio CD's.

Software development is well underway. 77 titles are anticipated before Christmas '93

CW PRICE £289.99

AMIGA 4000

This has got to be the greatest development to the Amiga since its conception in 1985. The 4000-030's are packed full of features and truly represent a milestone in design and value for money from C.B.M.

WHAT YOU GET! FEATURES: 68030ec processor • 25Mhz clock speed • Optional chip and fast RAM configurations (expandable to 16 Mb on mother board, 2 gigabyte max • 9 interfaces • 4-16/32 bit Zorro III expansion slots • 80/120 hard disk and lots more!!

STAR BUY

WHAT YOU PAY

Due to the varying specification of products being shipped by Commodore in terms of chip and fast memory and in cojunction with the massive increase in prices of additional memory, we can only ask you to **CALL AMIGA SALES FOR BEST PRICES!!**

A4000-030 with 80/120 HD options

	Chip RAM	Fast RAM	
A4000-030 80Mb	1	1	£P.O.A.
A4000-030 80Mb	2	0	£P.O.A.
A4000-030 80Mb	1	0	£P.O.A.
A4000-030 80Mb	2	4	£P.O.A.
A4000-030 120Mb	2	2	£P.O.A.

CALL FOR PRICES!

A4000-040 With Massive price reductions call now for the best deal!!

Prices include FREE next working day delivery.

NEED EXTRA FAST RAM?

NOW AVAILABLE!! 32-Bit Memory Modules

1 Mb ....£POA 4 Mb ....£POA

8 Mb ....£POA

FPU's 25 Mhz/50 Mhz....£POA

CALL FOR PRICES!

All memory prices have gone up in price call AMIGA SALES for the best deals!

AMIGA 1200

FEATURES INCLUDE: 68020 Processor Running at 14 Mhz • 2Mb Chip RAM (expandable) 256 colours on screen from a 16.8 million colour palette • Full Amiga Key board (with Alpha numeric key pad).

A1200 Summerpack .... NEW! £294.99
Includes A1200 Nigel Mansell & Trolls!

A1200 Basepack £284.99

A1200 with Sleepwalker £294.99

A1200 with 30Mb HD £394.99
Includes Commodores on-site warranty!

A1200 HARD DRIVE UPGRADE PACKS

COMPUTER WORLD are now offering a FREE fitting service in store for Hard Drives to the A1200/A600 Ask for Steve or Chris. This Service is available seven days a week. Add £20 for additional warranty (only available from date of original purchase if proof of purchase is supplied). This service has already proved popular with hundreds of COMPUTER WORLD customers.- DON'T DELAY - VISIT TODAY!

All 2.5" IDE Hard disks offer ultra fastaccess time and are supplied from leading manufacturers such as Western Digital/Seagate. Pack also includes cable screws and software.

40Mb pack..£119.99 60Mb pack..£169.99

80Mb pack..£199.99 120Mb pack..£294.99

1 year warranty on all models!!

A1200-PCMCIA FAST RAM EXPANSION

Credit card memory now available

2Mb....£114.99 4Mb £169.99

POWER A1200 TRAPDOOR EXPANSION

CW ARE OFFICIAL POWER DEALERS

These highly rated top selling British-made boards have proved to be market leaders, already renwnowned for premium quality products, POWER have let no one down with the PC1204 - Gold Award Amiga Format.

features include: Zero wait state • Optional Ultra fast FPU (50Mhz) • Real time battery backed clock • Low power • Optional FPU disable switch

PC 4 Mb(no FPU)........ £185.99
PC 4 Mb(20 Mhz 68881 FPU)........ £259.99
PC 4 Mb(25 Mhz 68882 FPU)........ £279.99
PC 4 Mb(33 Mhz 68882 FPU)........ £289.99
PC 4 Mb(40 Mhz 68882 FPU)........ £299.99
PC 4 Mb(50 Mhz 68882 FPU)........ £339.99
includes real time clock

A 1200 ACCESSORIES

CW A1200 real-time clock 1 yr warranty........ £15.99
CW A1200 600 HD prep disk........ £13.99
Control Centre (inc. FREE cables)........ £36.99
Dust Covers........ £5.99
[illegible] £12.99

GVP A1200 ACCELERATORS

GVP A1230 ACCELERATOR

68030ec-accelerator chip running at a blistering 40 Mhz with an optional 40MHz fpu (68882) and memory configurationsn of up to 32 Mb. Simply awesome and it's on demo in our **LEEDS SUPER STORE!**

0 Mb, no fpu........ £239.99
4 Mb, no fpu........ £379.99
4 Mb, 68882 fpu........ £479.99

A1200 ACCELERATORS

The Microbotics M1230XA is available in a 40Mhz version & a 50 Mhz inc memory management unit. This peripheral can expand up to 128 Mb of FAST 32-bit memory. Existing MBX users can transfer their current memory and fpu and includes real-time clock.

M1230XA 40 Mhz 0Mb £269.99
M1230XA 40 Mhz 2Mb £349.99
M1230XA 40 Mhz 4Mb £428.99
M1230XA 40 Mhz 8Mb £569.99
M1230XA mmu 50 Mhz 0Mb ... £349.99
M1230XA mmu 50 Mhz 2Mb ... £428.99

A1200 32-BIT RAM CARD

NEW

FEATURES:- Integrated 9 Mb 32 bit Ram for A1200 • Optional 68882 FPU and oscillator • Real time battery backed clock, a must for hard drive users • Auto config wth zero wait states • 100% compatible with A1200.

1Mb with clock, no FPU or Oscillator........ £124.99
5Mb with clock, no FPU or Oscillator........ £259.99
5Mb with clock & oscillator, 16MHz 68882 FPU..... £307.99
5Mb with clock & oscillator, 20MHz 68882 FPU..... £313.99
5Mb with clock & oscillator, 25MHz 68882 FPU..... £319.99
5Mb with clock & oscillator, 33MHz 68882 FPU..... £323.99
9Mb with clock, no oscillator, NO FPU........ £399.99
9Mb with clock & oscillator, 16MHz 68882 FPU..... £449.99
9Mb with clock & oscillator, 20MHz 68882 FPU..... £454.99
9Mb with clock & oscillator, 25MHz 68882 FPU..... £464.99
9Mb with clock & oscillator, 33MHz 68882 FPU..... £474.99

AMIGA'S

A600 1 Mb Base Pack £194.99

A600 2 Mb Base Pack £234.99

A 600 THE WILD, THE WEIRD & THE WICKED

1 Mb A 600 as standard and includes the excellent value Software titles: Deluxe Paint III • Formula One Grand Prix • Putty • Pushover.

CW BARGAIN PRICE £189.99

A 600 2Mb [illegible] £229.99

HARD DRIVES

GVP IMPACT SERIES II Hard Drives, the fastest Hard Drive/Controller for the Amiga. Features Game Switch, external SCSI port, FAAASTROM SCSI Driver, GVP's custom VLSI chip and internal RAM expansion up to 8 meg! Units use high specification fast-access QUANTUM Hard Drives coming with 2 yr. guarantee.

500/500+

A500-HD8+ 42 Mb £244.99
A500-HD8+ 80 Mb £342.99
A500-HD8+ 120 Mb £389.99
A500-HD8+ 213 Mb £564.99
A500-HD8 controller only £179.99

1500/2000

Series II Hard Disk Controller/RAM card... £122.99
Series II 42 Mb Hard Disk and RAM card.. £284.99
Series II 80 Mb Hard Disk and RAM card.. £329.99
Series II 120 Mb Hard Disk and RAM card.. £406.99
Series II 213 Mb Hard Disk and RAM card... £544.99

BOOST YOUR AMIGA'S PERFORMANCE WITH EXTRA MEMORY - £49.99 PER Mb

ACCELERATOR-HARD DRIVES

500/500+

GVP Combination Accelerators & Hard Drives-The ultimate expansion product for the Amiga 500!

A530 Combi 40MHz + 42Mb........ £474.99
A530 Combi 40MHz + 80Mb........ £569.99
A530 Combi 40MHz + 120Mb........ £659.99
A530 Combi 40MHz + 213Mb........ £744.99
A530 68882 Co-Processor........ £219.99

1500/2000

GVP G-Force 030-25MHz + 1Mb........ £474.99
GVP G-Force 030-40MHz + 4Mb........ £757.99
GVP G-Force 030-50MHz + 4Mb........ £1136.99
GVP G-Force 040-33MHz + 4Mb........ £1419.99

GVP Accelerator RAM

1Mb Simm-32 Bit 60 Nanoseconds........ £65.99
4Mb Simm-32 Bit 60 Nanoseconds... £179.99

DISK DRIVES

All drives feature super slim design, enable-disable switch, thru port and come with a 1 year replacement guarantee!

Computer World Deluxe Drive........ £54.99
Power-high density disk drive.. NEW £99.95
Roctec Roclite........ £69.99
includes Anticlick and Virus Checker.
Disk head cleaner £3.99

MONITORS

COMMODORE 1942 14" Monitor ...£379.99
Ideal for A1200/4000 • AGA • 28mm Dot Pitch • Tilt 'n' swivel stand • Built-in Stereo Speakers • Works with ALL Amigas in most resoloutions • 1 yrs on-site warranty

COMMODORE 1940 14" Monitor ...£289.99
Specification as above, but this one has a 39mm dot pitch

PHILIPS 8833Mk II..... REDUCED! £194.99
Col. Stereo Monitor inc 'Lotus Turbo Challenge', + 1 yrs on-site warranty.

PHILIPS OFFICIAL T.V. TUNER...... £34.99
Complete with AFC enables you to watch T.V. through your monitor.

MONITOR ACCESSORIES-

14" dust covers........ £4.99
14" tilt & swivel stand........ £13.99
Anti-glare filter screen........ £19.99
A4 copy holder........ £12.99

MEMORY EXPANSION

A 500+

A RAM module can expand your chip RAM up to 2 Mb by using the trapdoor expansion port. All our boards carry a full 2 year no quibble replacement guarantee.

CW PRICE........ £39.99

A 500

½ Mb inc. clock........ £29.99
½ Mb without clock clock........ £19.99

A 600

PA 601-populated-1Mb........ £39.99
PA 601-unpopulated-0Mb........ £24.99
PA 6020 2 Mb PCMCIA card........ £114.99
PA 6040 4 Mb PCMCIA card........ £169.99

BOOKS

We stock the best selling range of Bruce Smith books

Mastering Amiga DOS Vol 1........ £21.95
Mastering Amiga DOS2 Vol 2........ £19.95
Mastering Amiga W.B. 2........ £19.95
Mastering Amiga C £19.95
Mastering Amiga Printers........ £19.95
Mastering Amiga Assembler........ £24.95
Mastering Amiga System........ £29.95
Mastering Amiga AMOS........ £19.95
Mastering Amiga AREXX........ £21.95
Mastering Amiga Beginners........ £19.95
A600 Insiders Guide........ £14.95
A1200 Insiders Guide £14.95

A 570 CD-ROM

Long awaited, superb performance, tempting but too expensive-NOT ANY MORE!!!! This excellent interface for A500/500+ owners is now at a price that YOU can afford. Use it to exploit stunning software packages or simply to listen to your favourite tunes

WHAT YOU GET! • A570 CD ROM • Fred Fish Disks 1/660 • Sim City • Hutchinson's Encyclopedia

NB you need at least 1Mb of chip ram so check with telesales before ordering.

WHAT YOU PAY £149.99

SPECIAL OFFER!

Pandora's CD - Over 500 Mb of Sound, Clip Art and Animation on one feature packed CD!

CW PRICE £4.99

EPSON FLAT BEDS

Epson scanners offer the ultimate in flexibility, technical specification and value for money. For more information call 0532-350091 and ask for the Epson info line.

EPSON GT 6500 (PARALLEL)...... CW PRICE £729.99

STAR BUY

Epson GT 6500 SCSI... £812.99
Epson GT 8000........ £1084.99
Epson GT transparency adaptor........ £528.99
Epson GT document feeder........ £729.99
For automated O.C.R.

AMIGA MUSIC

Technosound-turbo 1........ £29.99
Technosound-turbo 2........ NEW! £36.99
Audio Engineer........ £79.99
The ultimate sound sampler with built-in printer through port!

Pro-Midi 2 Interface........ £24.99
professional quality midi interface is very flexible. It has four ports 2 in, 2 out, (inc. FREE midi lead)

GVP Digital Sound Studio........ £39.99

'MIRACLE' KEYBOARD ...... REDUCED! £249.99
It really does teach you how to play!!! Full size keyboard with built in MIDI interface • 100 onboard sounds with effects • ability to customise lessons by use of artificially intelligent software!!

JOYSTICKS

All Joysticks are fully micro-switched unless stated.

Fight Gripstick........ £8.99
Jet Fighter........ £14.99
Apache........ £7.99
Cheetah Bug........ £13.99
Top Star Stick........ £24.99
Analogue Freewheel........ £38.99
Analogue Joystick adaptor........ £9.99
Speedking Analogue........ £9.99
Gravis Joystick........ £21.99
Gravis game pad........ £19.99
Intruder 1 (Flight Sims)........ £24.99
Freewheel (Analogue)........ £38.99
Python 1m........ £9.99
Q Joy Turbo........ £7.99
Black Cruiser........ £11.99
Pink Cruiser........ £11.99
Cruiser........ £9.99
SG Pro Pad........ £14.99
Zipstick Auto Fire (top selling)........ £11.99
Konix Analogue (Flight Sims)........ £14.99
BUG........ £14.99
Cruiser........ £9.99
Pro 5000........ £12.99
Comp Pro 5000........ £11.99
Mini Pro 5000........ £12.99
Mini Pro 5000 Deluxe........ £15.99
Beetle Mouse (for kids) great dpi........ £14.99
Foot Pedal........ £24.99

PUT US TO THE TEST! Our highly trained staff are waiting to take your call on 0532-350091

VIDEOS

The Amiga History Video........ £9.99
Amiga History Primer........ £14.99
Animation Vol. 1........ £9.99
Animation Vol. 2........ £9.99
Star Wars Animation........ £8.99
Amiga Graphics Vol. 1........ £9.99
Deluxe Paint Video Guide........ £14.99
Advanced Deluxe Paint Video Guide........ £14.99
Desktop Video Vol. 1........ £9.99
Desktop Video Vol. 2........ £9.99
Amiga Service &Repair Guide........ £9.99

PRINTERS

COMPUTER WORLD ARE A CITIZEN SUPER DEALER

SWIFT 90 COLOUR - 9 PIN colour printer is fast quiet, has additional fonts and comes complete with a 2 year warranty and V 2.0 driver disk!

- Swift 90 Mono .... NEW! £154.99
- Swift 240 Colour (FREE Pen Pal 1.5).... £269.99
- Swift 240 Mono.... £259.99
- Swift 200 Colour.... £219.99
- Swift 200 Mono.... £192.99
- Citizen Auto sheet feeder.... £79.99

Citizen printers come with 2 year warranty. + V.2.0 Amiga driver disk

BUBBLE JET

MAJOR DEALER • MAJOR DEALER

Canon

STAR BUY!

CANON BJ 10Sx
Upgraded version of BJ10ex, the worlds biggest selling portable inkjet printer. Newly designed front end, fasterprint times, more fonts, 95% Amiga Gold Award, includes BJ10Sx Driver Disk!

NEW NEW NEW £227.99

- CANON BJ 200 95% Amiga Gold Award, ...£319.99
  Feature include: 300 dpi. • Min 80 page Auto sheet feeder • minimum 3 pages per minute SUPER VALUE!
- CANON BJ230 .... NEW! £379.99
  Wide carriage version of BJ200
- CANON BJ 300.... £429.99
  80 column bubblejet provides laser quality output.
- CANON BJ 330 136 column bubblejet.... £499.99
- CANON BJ ex/sx cartridges.... £17.99
- CANON BJ 200 cartridges.... £24.99
- BJ 10 ex/sx Autosheet feeder.... £49.99

HEWLETT PACKARD

- H.P. Portable.... £359.99
- H.P. 510 Mono.... REDUCED! £262.99
  Successor to the top selling 500 Mono
- H.P. 500 (Colour).... REDUCED! £309.99
- H.P. Deskjet 550 (Colour). REDUCED! £524.99
  4 times faster than previous HP range • Top sellers • Superb printers HP printers come with 3 year warranty.
- H.P. Deskjet 1200C Laser/inkjet.... £1369.99
  45 scaleable fonts,P.C.L. level 5, 6 pages per min. 300x600 dpi (if using the resolution enhancement tech 4 pages per min.) 2Mb of RAM expandable to 26 Mb, laserjet compatible.
- H.P. Laserjet 4L.... REDUCED! £602.99
  4 pages per minute, laser easy to install & use, no on/off switch 1 tray 100 input 50 output. 26 scaleable typeface's, 1Mb of RAM expandable to 2Mb.
- HP black ink cartridge £24.99
- HP colour ink cartridge £29.99

PRINTERS

COMPUTER WORLD PRINTER PACK
Supplied with ALL printers containing 1.8m std. printer cable, printer ribbons/cartridge and 250 sheets of paper absolutely FREE.

star MICRONICS

- LC-100 Colour.... REDUCED! £155.99
- LC24-100 .... £189.99
- LC-20.... £132.99
- LC-24-20 (II).... £224.99
- LC-200 Colour.... £199.99
- LC24-200 Colour.... REDUCED! £264.99
- XB24-200 Colour.... £379.99
- SJ48 Bubblejet £219.99

Star printers come with one year warranty.

AUTO SHEET FEEDERS

- STAR LC20.... £57.99
- STAR LC200.... £59.99
- STAR LC24-200.... £62.99
- STAR LC24-20.... £62.99
- STAR SJ48.... £49.99

PRINTER ACCESSORIES

We have a large range of high quality printer accessories for all the printers we sell including: dust covers from £2.99 • Ink cartridges from £13.99 • Mono ribbons from £3.50 • Colour ribbons from £7.99 • Printer stands from £7.99

MICE & TRACKBALLS

- Beetle Mouse.... NEW! £14.99
  Kids Mouse with superb dpi.
- Stars 'n' Stripes.... NEW! £14.99
  Kids Mouse with superb dpi.
- European Community (Design).. NEW! £14.99

ALL MAKE EXCELLENT KIDS PRESENTS!

- Mouse 121.... NEW! £14.99
- Golden Image-Mega Mouse.... £12.99
  Received 90% Amiga Format Gold Award
- Mega Mouse 2.... £16.99
  Newly designed, 400 dpi, an absolute must!!
- Optical Mouse £29.99
  High precision, pointing device.
- Crystal Trackball £37.99
- Infrared-Cordless-Mouse.... £47.99
  (Rechargeable top selling innovation.)
- Optical Pen Mouse.... £39.99
- High Quality 8mm mouse Mats.... £3.99
- Auto Mouse/Joystick Switch.... £15.99
  Don't damage your Amiga's ports!This device saves wear and tear makes switchover FAST.

SCANNERS

Powerful image processing tools for the office or the home environment.

POWER-Features include: 100-400 dpi • 64-Greyscales Thruport to printer • Free Editing software.

- Power Scanner v3.0 .... £99.99
  Includes Free upgraded editing software.
- Power Scanner v3.0+OCR.... £149.99
  Includes Free upgraded editing software
- N.B. Existing v3.0 owners can upgrade to OCR for.... £49.99
- Power Scanner Colour.... £234.99

GOLDEN IMAGE-

Alfascan Features: Scan and Save • Migraph Jnr. OCR software • 400 dpi • 256-Greyscale • Not A1200/4000 compatible.

CW NEW LOW PRICE £139.99

Alfascan+ Features: Touch up an merge it • Migraph Jnr.OCR software • 400 dpi • 256-Greyscale • 100% compatible with all Amigas.

CW PRICE £169.99

DISKS

Don't confuse these quality disks with others currently available. 3.5" 100% certified error free 70% clip. All disks include FREE high quality CW labels.

10	£4.99	200	£72.99
25	£12.99	500	£174.99
50	£22.99	750	£259.99
100	£39.99	1000	£339.99

Now back in stock! TDK branded 3.5" DS DD diskettes boxd in 10's with lables. Top quality media from the experts!

10	£5.99	100	£52.99
50	£28.99	500	£249.99

1000 Computer World Disk Labels.... £9.99

ACCESSORIES

- Premier Control Centre.... £34.99
  For the A600,A500 and A500+
- CW Stereo Speakers.... £37.99
- DATA SWITCHES-(25 pin D type)
  2 way..£15.99 3 way..£17.99 4 way..£19.99
- Connecting Cable for the above.... £9.99
- Action replay cartridge for A500/500+.. £54.99
- Hi-Fi Stereo Speakers (new style).... £39.99
- Spectrum Emulator (on 2 disks with 8 games)... £2.99
- Replacement internal A500/500+ drive.. £54.99
- Dust Cover A500/500+.... £5.99
- Dust Cover A1200.... £5.99
- Dust Cover A600 .... £5.99

MULTI-MEDIA

Computer world are a major stockist of rombo's multi-media products for the Amiga and P.C. Be assured that we offer extensive technical backup on all Rombo products and that the majority are on demo in our showroom.

- Vidi Amiga 12 RT (AGA suprt).... £135.99
  Real-time colour capture from any video source
- Vidi Amiga 24 RT (AGA suprt).... £224.99
  24-Bit Real-time colour capture from any video source for the professional/serious user
- Vidi Amiga 12 (AGA version).... £77.99
- Vidi Amiga 12 (Std version).... £75.99
- Rendale Genlock 8802 FMC.... £169.99
- GVP Genlock.... £284.99

Vidi Amiga 12 price includes insured postage for extra peace of mind!

HAMA Genlock 292 (10 MHz bandwidth)
Compatible with all Amigas. Hi band & composite video

NEW..NEW..NEW £279.99

Seperate RGB connector cable, RGB colour control for Amiga signal. Output fader control (video only)special Amiga 3000 switch.

- Rocgen Plus.... £149.99
- Rockey Chromakey.... £149.99
- Rocktech PIP View (picture in picture unit).... £99.99
- Rocgen VGA.... £359.99

Join the thousands of satisfied customers who shop at COMPUTER WORLD

LEADS & CABLES

Midi-Midi 2m	£3.99	Modulator ext.	£9.99
Midi-Midi 3m	£4.99	Amiga-Scart	£9.99
Midi-Midi 5m	£5.99	Amiga-8833MkII.	£9.99
Disk Drive ext.	£9.99	Joystick long ext.	£4.99

- Mouse/Joystick ext.... £4.99
- Mouse/Joystick splitter.... £4.99
- Serial/Modem cables.... £9.99
- Amiga-Multisync.... from £9.99
- Amiga-Microvitec.... £9.99
- Amiga-CPC monitor.... £9.99
- Amiga-RGB/TV.... £9.99
- SCSI Cable various £9.99

Printer 1.8m.... £5.99 Printer 2.0m HQ. £7.99

SOFTWARE

ACCOUNTING

- Arena Accounts.... £82.99
- Personal Finance Manager Plus £29.99
- Home Accounts 2.... £39.99
- System 3.... £39.99
- System 3E.... £54.99
- Cashbook Comb.... £54.99
- Day by Day.... £22.99

SPREADSHEETS

- Maxiplan V4.... £36.99

PRESENTATION & SLIDESHOW

- Can Do V2.... £99.99
- Deluxe Video 3.... £69.99
- Scala 500.... £79.99
- Scala Professional.... £179.99

FRACTAL SFX & IMAGE PROCESSING

- Art Department Pro 2.... £134.99
- Art Dept Pro Conv Kit.... £59.99
- Deluxe Paint 4 AGA.... £69.99
- Imagemaster.... £129.99
- Morph Plus.... £159.99
- Pro Vista v3.... REDUCED! £49.99

INTERGRATED PACKAGES

- Mini Office.... £39.99
- Gold Disk Office 2.... £46.99

MODEMS

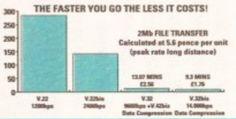
US Robotics Authorised Reseller

The No 1 name in fax modems - US Robotices pride themselves on high quality modems at an afordable price. They come backed with a 5 year warranty and are fully BABT approved.

THE SPORTSTER.... £294.99

This modem incorporating data pump technology, operates at 14400 bps standard. It is 50% faster than 9600 bps modems and has full error control and data compression. It has the ability for throughput to reach 57600 bps.

WHY IS SPEED SO IMPORTANT?
(ask Tele-sales for a full information pack if required)



SOFTWARE

LANGUAGES

- Blitz Basic.... £P.O.A.
- Amos.... £34.99
- Amos Compiler.... £21.99
- Amos 3D.... £25.99
- Amos Professional Compiler.... £35.99
- Easy Amos.... £25.99
- Cygnus Ed Pro 2.... £59.99
- Hisoft Basic.... £39.99
- Hisoft Extend.... £16.99
- Hisoft Dev Pac.... £47.99
- Hisoft Pascal.... £64.99
- Lattice C v6+New Version £239.99

FONT PACKS

- Anim Fonts (Vol 1,2,3 or 4).... £32.99
- Kara Fnts (Hdlines 1,2 or 3,subhds).... £39.99
- VideoFnts:(Serif1/SansSerif 1/2/Decrtve)... £49.99
- Typesmith.... £124.99

UTILITIES

- Cross Dos v5 (inc. PC emulator).... £32.99
- Dos 2 Dos.... £34.99
- GB Route Plus.... £36.99
- Directory Opus v4.0.... £49.99
- Gigamem.... REDUCED! £69.99
- Hotlinks Editions.... £89.99
- Notebok.... £29.99
- Quarterback Tools Deluxe.... £99.99
- Quarterback v5.... £52.99
- Quarterback Tools.... £54.99
- X-Copy Professional.... £29.99

VIDEO PRODUCTION & TITLING

- Big Alternative Scroller.... £36.99
- Big Alternative Scroller 2.... £59.99
- Broadcast Titler 2.... £229.99
- Broadcast Titler 2 Hi-res Edition.... £279.99
- Font Pack 1 for BT2.... £86.99
- Pro Video Post.... £164.99
- Scala 500.... £79.99
- Scala Professional £179.99

ANIMATION

- Deluxe Paint 4 AGA.... £69.99
- Morph Plus.... £159.99
- Real 3D Classic.... £77.99
- Real 3D V2.... POA
- Take 2.... £36.99
- Personal Paint.... £46.99

RENDERING & RAYTRACING

- Alternative 3D Textures.... £29.99
- Essence.... £49.99
- Morph Plus.... £169.99
- Pixel 3D Pro.... £144.99

DATABASE

- Mailshot Plus.... £36.99
- Superbase 2.... £19.99
- Superbase Personal 4.... £119.99

SOFTWARE

WORD PROCESSING & DTP

- Final Copy Release 2.2.... £79.99
- Kindwords.... £36.99
- NoteBook.... £29.99
- Pagestreamv2.22.... £79.99
- Pagestream Business Forms.... £29.99
- Pagesetter 3.... £41.99
- Pen Pal.... £39.99
- Professional Page v4.... £119.99
- SoftFaces (vols 1-4).... £59.99
- Soft Clips.... £42.99
- The Publisher.... £36.99
- Wordworth v2 (AGA).... £76.99
- Turbo Print Professional.... £34.99

MUSIC & SOUND

- KCS Level II v3.5.... £219.99
- Bars and Pipes Pro V2.... £249.99
- Kits for Bars and Pipes.... £44.99
- Super Jam v1.1.... £89.99
- The Patchmeister.... £62.99
- Triple Play Plus.... £164.99
- SyncPro.... £184.99
- One Stop Music shop.... £564.99
- AMAS 2.... £74.99
- Clarity 16 (16 bit sampler).... £114.99
- Quartet.... £39.99
- Stereo Master.... £29.99
- Videomaster.... £52.99

GAMES-LEISURE

- Dune2 .... NEW! £26.99
- Walker £24.99
- Road Rash £21.99
- Gunship 2000 .... £27.99
- Swing Value £7.99
- Abandoned Places £27.99
- Graham Gooch Cricket £28.99
- F-19 Stealth Fighter.... £14.99
- Operation Stealth £14.99
- Tank Platoon £14.99
- Flashback £28.99
- Body Blows (Team 17).... £24.99
- Superfrog (Team 17).... £24.99
- Lemmings 2 (Psygnosis) 1Mb.... £27.99
- Desert Strike (E. Arts) £27.99
- Sensible soccer £23.99
- Chuck Rock 2 (Son of chuck) £23.99
- Street fighter 2 (US Gold) £25.99
- B17 Flying Fortress (Microprose).... £29.99
- Zool (Gremlin) £23.99
- Humans (Jurassic Levels) £27.99
- Abandoned Places (Ice) £32.99
- Premier Manager (Gremlin).... £23.99
- Nick Faldo's Championship Golf £32.99
- Historyline 1914-1918 (Blue Byte) £32.99
- Sleepwalker-comic Relief (Ocean) £23.99
- Indy Jones & Fate of Atlantis £36.99
- Legends of Valour (US Gold) £37.99
- Wing Commander (Mindscape) £32.99
- Sportsmasters (A1200 compatible).... £27.99
  Inc PGA Tour Golf • European Championship Soccer • Indy 500 • Advantage Tennis
- Syndicate £28.99
- The Lost Viking £28.99
- The Ancient Art of War in the Skies.... £28.99
- Goal by Virgin New by dino Dini £24.99
- Beavers Grandslam.... NEW! £25.99

Please note that when ordering any products in the current advert with a value in excess of £100 you are entitled to any game listed at a 10% discount...GREAT VALUE...only from COMPUTER WORLD!!

HOW TO ORDER

TO ORDER BY PHONE: 0532 350091
Quoting your Credit Card No.

VISA · EUROCARD · SWITCH · MasterCard · ACCESS

For Customers not able to visit our Showroom we offer one of the fastest and most complete mail order services available.
STANDARD DELIVERY FREE
Next day delivery only £5.00 • 2 day delivery £3.50

By Post to:
PHOENIX COMPUTER WORLD, UNIT 2, YORK TOWERS, 383 YORK ROAD, LEEDS LS9 6TA.
Please make cheques payable to Phoenix. Allow 5 working days for cheque clearance.
*Same-Day Despatch on Credit Card Orders/ bankers draft/ building society cheque/Postal orders.

CUSTOMER CARE AND GENERAL ENQUIRIES
(0532)350652 FAX: (0532) 350702

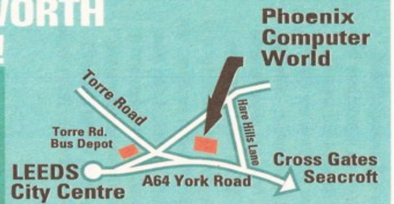
HOW TO FIND US

WELL WORTH A VISIT!

FREE PARKING

800 sq.ft. SHOWROOM

EASY ACCESS FROM M1 AND M62



OPEN 7 DAYS
Mon. Sat. 9.30 am - 6.00 pm
Sun. 11.00 am - 3.00 pm
Thurs 'late till eight'

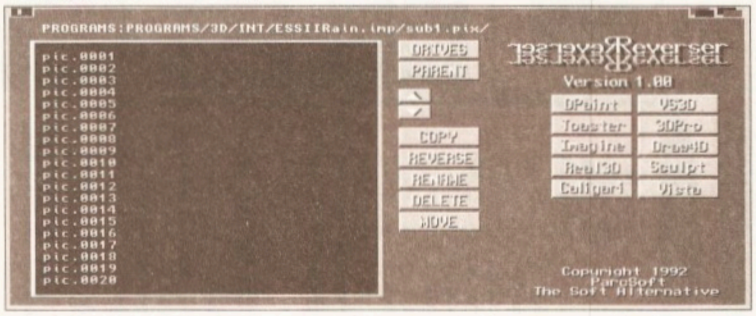
E&O.E.*

continued from page 20

£10 program is a real life-saver for the Amiga animator faced with the common but thorny problem of filenames. If you take a typical case which might involve using *Rend 24* to compile a series of 100 animation frames produced by *Real3D Classic*, then you'll soon see what I mean. *Real3D* uses a filename of **File0**, **File1** and so on as it produces its frames, but *Rend24* requires its incoming files to follow the *Deluxe Paint* naming convention – **File001**, **File002** etc. Now you *could* rename every single file by hand using the Shell, or you could use *Reverser* and have the job finished in seconds; the choice is yours. Oh yes, it can also rename as well as renumber and it can deal with filename extensions produced by most of the top paint and animation software. Don't leave home without it.

PASTURES NEW

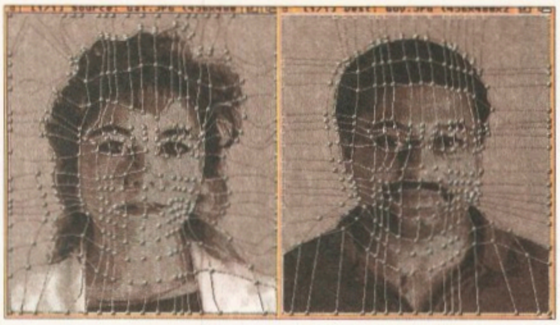
Cheap titling and digitising have been available on the Amiga for some time now, but it is only recently that some of the more high-powered applications, like image-processing and morphing, have begun to become available "on the cheap". But what *is* arriving is certainly worth a look, and when I say cheap, this time I mean just that – there is both a PD morphing program and a PD image processor. What's more, GVP's dedicated commercial morphing program *Cinemorph* has recently been reduced to only £24.95, so there's a bit more choice available if you really want more.



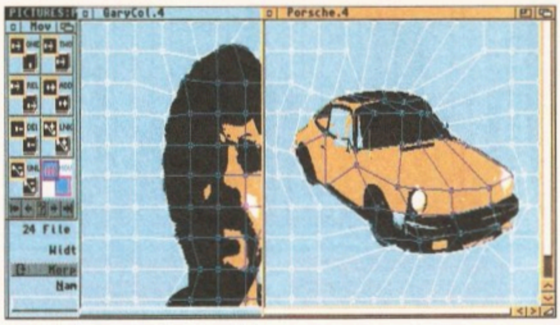
Suffering from the heartache of filename chaos? What you need is Reverser.

Morphing

Let's start with the morphing programs, since morphing is the latest graphics fad to hit film and TV and it's now available for free, in the shape of TopicSave Limited's PD program *TSMorph*.



Morphing is a powerful method for transforming one image seamlessly into another. CineMorph (above)...



... is a commercial program which has recently tumbled in price, or you can try TSMorph, which is freeware.

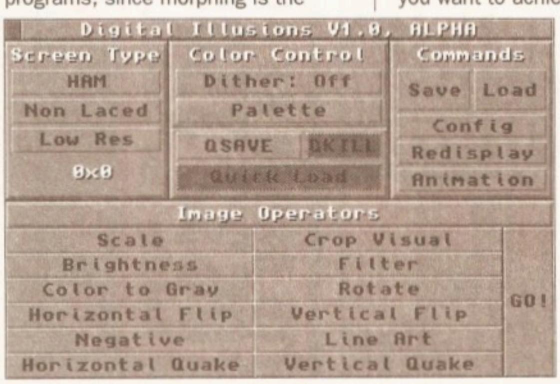
Morphing, as you should know by now, involves smoothly blending and warping one image into another – so seamlessly that you shouldn't be able to see the joins. Morph a walrus into a carpenter, or a ship into a shore – or copy blockbuster movie effects such as those seen in *Terminator 2*. Whatever, if your Amiga is reasonably powerful then you can have a lot of fun with morphing.

The principle is straightforward – take two different images, define a series of points on their surfaces and then translate the first set of points to the position of the second set, stretching the first image into the shape of the second. At the same time perform a cross-fade between the two images and the illusion is complete. However, unless you already have an Amiga with 24-bit graphics, lots of memory, a big hard drive and a fast processor you won't be able to get photographic quality from your computer. Morphing really is very hardware-intensive if you want to achieve great results, but it is still possible to work in lower resolutions and fewer colours and get acceptable results.

TSMorph and *CineMorph* work in a very similar way, enabling you to manipulate lower-quality substitutes on screen instead of the original images (to save memory) and set up the points for two separate images or a sequence of images to make an animated morph. Both also let you warp just one image over time.

Once the morphing parameters are applied it's then a case of sitting back and waiting while your Amiga processes all the frames that make up the finished sequence – which could take some time on a normal 68000-equipped Amiga. You'll also need plenty of storage space – either RAM or hard-drive – so while morphing on an Amiga is actually very cheap compared to using full-spec broadcast equipment, it is still relatively expensive and time-consuming. For *TSMorph* some ARexx skills will also come in handy.

The latest version of *TSMorph* has only recently been released and I haven't had much time to test it, but since it's free what have you got to lose? But be warned, you'll need at least AmigaDOS 2.04 to run it, and to use different image formats you'll need access to *WASP* (a PD image converter), or Centaur's *Opal.library*. *CineMorph* is an adequate commercial morpher and its recent price drop will be welcomed by those who thought its initial price of almost £100 rather too high, considering its shortcomings. You'll find more details about it in the review in *Amiga Shopper* 23. (If you missed that, turn to the back issues service on page 108.)



The simple interface of Digital Illusions leads to...



... some interesting results – this one a starburst effect.

Image-processing

There are a couple of PD image processors – *ImageLab* and *Digital Illusions*.

ImageLab is getting quite old now (it hails from 1991) and isn't the fastest program around, but it has programmable convolutions and quite a lot of other interesting features, so it's still worth searching out. Shareware fee is $25.

But I'm afraid *ImageLab* looks pale beside *Digital Illusions*, a little gem which turned up on Cover Disk 45 of our sister magazine *Amiga Format*. It's an impressive image-processing program which gives a real introduction to manipulating your images for very little outlay. What's more, it's fast, easy to use and offers some effects unavailable on even the most expensive commercial packages.

Among *Digital Illusions'* better effects are "starburst" (which adds starburst flares to the bright spots of an image), the now-ubiquitous emboss and negative, a whole bunch of wave distortions, stars, spirals, motion blur and more. And even better, each can be animated over time, combined with other effects and then output as single frames for animating. It's surprisingly fast too, for a PD program.

Current inputs include 24-bit (all operations are done internally in 24-bit) up to 320 x 256 – though I think this will be improved – and there is a range of standard IFF outputs, including 24-bit, HAM, hi-res, lo-res and combinations thereof.

Well worth a look, and a prime example of what AMOS programming can do in the right hands. Even better things are promised for version 2, which will only be available to registered users. *Digital Illusions* is shareware (US$15) and requires a minimum of 1Mb of memory. Granted it's not up to the standard of *ADPro* or *ImageFX*, for instance, but it is a darn site cheaper!

SPECIAL EFFECTS

Where would DTV be without special effects? The obvious solution is to use a vision mixer capable of performing such effects, but such boxes of tricks aren't cheap. Basic wipe effects can be simulated with



Blow your images to bits with the special effects in Adorage, which was developed for a TV studio.

Deluxe Paint, but what if you want something a little more spectacular, like a shattering effect or a page turning before your very eyes?

To get a realistic-looking TV effect will require a lot of hardware and software (we're talking 24-bit quality here) but there are other possibilities. The first is to use a program like ProDAD's *Adorage* (£80 or less), which was initially developed for a TV studio, to do the tricky stuff for you. What *Adorage* does is to take an Amiga IFF image (but not HAM or AGA) and break it up and reassemble it into a range of new effects, flying the pieces around before assembling the image again. By doing such an operation over time and genlocking the image over video, you can make a logo "peel" on to the screen, or shatter off it. In fact, a whole range of interesting possibilities is available.

Adorage doesn't produce these effects in real time though – the files first have to be generated as an animation before being played back to see the full-motion effect – and a hard drive, 3Mb of RAM (or more) and an accelerator will prove to be a great help, because *Adorage* needs a lot of processing to calculate its effects and the resulting files can be quite large. The advantage is that the effects are very smooth and some do look *very* impressive. For a full review of *Adorage*, see *Amiga Shopper* 24 (also still available from our back issues service, page 108).

Another program worth searching out from the bargain bins is the long-discontinued *AniMagic* by Aegis, which did similar things to *Adorage* but with more effects (though with less-smooth playback).

CAMCORDERS

Here's where cheap really does become a relative term. Is £700 for a good camcorder "cheap"? Obviously the answer is yes if it does what you need for less than you would pay for an equivalent product. Follow my advice – take a look through one of the specialist video magazines, such as *Camcorder User* or *What Video*, and compare prices and features with what you require. There are so many camcorders to choose from, with so many features, that the ones I choose (and I'm certainly no expert when it comes to camcorders) probably wouldn't be the ones you'd choose. Having said that, I find from a quick flick through one of the said magazines that it recommends the Samsung VP-E807 (£549) as a best buy for Video8 format, Panasonic's NV-S7 (£999) for S-VHS-C format (small tapes) and the Panasonic NV-MS4 for full-sized S-VHS format. VHS models are being superseded by these formats, and at prices comparable to the better formats you may as well give them a miss. I *have* seen VHS camcorders advertised for as little as £299, but just because they are cheap doesn't mean they are good! Try before you buy is the safest advice here.

Again, the more you spend the more you can expect, but you can get perfectly adequate results for minimal outlay. Remember, features that today's Amiga users now take for granted were real breakthroughs only five years ago, and the Amiga is sure to continue knocking down the cost and power barriers and opening up new worlds of creation for impoverished animators and video makers on a shoestring. AS

WHERE TO GET IT

Here are some contacts for products mentioned, but note that they may also be available from other sources.

Alternative Image ☎ 0533 440041
BAS and Scroller 2, Real 3D Classic, Reverser.

Lola Electronics ☎ 0858 880182
MiniGen Genlock and L520 modulator.

Marcam Ltd ☎ 0604 790466
Rendale 8802FMC genlock.

Micro-PACE UK Ltd ☎ 0753 551888
Adorage.

Silica Systems ☎ 081 309 1111
GVP G-Lock and Cinemorph, Disney Animation Studio, MovieSetter

Visual Products ☎ 0494 890601
Rocgen Plus genlock.

Rombo Productions ☎ 0506 466601
Take-2 (£49.95), Vidi-Amiga 12 AGA, Vidi-Amiga 12 RT, Megamix Master.

• Check last issue's Software Product Locator for other packages that may be available in the field you're interested in. (*Amiga Shopper* 29 is still available if you missed it – see page 108.) Turn to page 109 for this month's PD Software Locator, and watch for an updated Hardware Product Locator next issue.

JARGON BUSTING

ANIM – A method of storing a sequence of consecutive images. Current formats include ANIM5 and ANIM8.

ANTI-ALIASING – Smoothing the jagged edges caused by the "stepping" of pixels in computer graphics by using intermediate colours between adjacent pixels.

CHROMINANCE – The "colour" part of a colour video signal.

COMPOSITE VIDEO – A video signal containing combined chrominance and luminance information.

DIGITISING – Conversion of analogue data to a digital form which a computer can understand. Could be sounds or video pictures, for example.

EDIT CONTROLLER – Programmable hardware/software which communicates with several video decks simultaneously in order to perform editing functions with them.

GENLOCK – Common term for hardware that enables computer graphics to be overlaid onto video.

GIF – A 256-colour graphics format used (mainly) on PCs.

JPEG – An image compression technique which can significantly reduce the storage size of 24-bit (and other) graphics while sacrificing little in the way of picture quality.

LIGHT-TABLE – *Deluxe Paint's* term for "onion-skinning", a method used by traditional animators to let them see back and forth through their animation sequences to test movement between individual frames or cels. Analogous to placing one image on tracing paper on top of the previous image in the sequence so that they can be compared to each other.

LUMINANCE – The "brightness" portion of a video signal. Produces a monochrome (black and white) picture on its own.

MODULATOR – A device for converting RGB or video signals into RF signals usable by the aerial socket of a TV or VCR.

MONITOR – A dedicated screen for displaying computer or video signals. Some monitors may have TV receivers built-in.

NTSC – The TV system prevalent in America and Japan, with 525 horizontal display lines running at 30 frames per second.

OVERSCAN – The size of an image needed to extend past the physical edges of a video display.

PAL – The TV system in use in the UK and much of Europe, with 625 horizontal display lines running at 25 frames per second. PAL and NTSC are not directly compatible.

PIXEL – Short for Picture Element, the smallest unit of display on a computer screen.

RGB – Red, Green, Blue: the component colours used to produce a TV image or computer picture – based on the colours of light which produce all colours of the spectrum when mixed in various proportions.

TIME BASE CORRECTOR – Hardware designed to correct any inaccuracies in the timing information of a video signal. Needed for successful vision mixing to ensure that all inputs are in sync.

VISION MIXER – Hardware for selecting between, or mixing, several incoming video feeds.

YC VIDEO – A "split" video signal format used in S-VHS and Video8 to provide better image quality by keeping the luminance (Y) and chrominance (C) components of the signal separated.



technical hotline
0234 841882

power computing

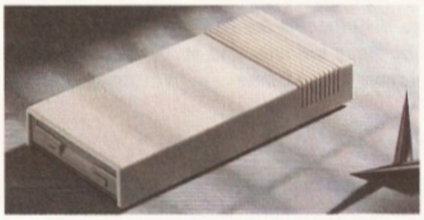
PC880B POWER DRIVE

The award winning external disk drive which includes Anti-Click (cures that annoying click), Virus Blocker (prevents viruses) and built-in Backup hardware.

The PC880B is available with Blitz Amiga, Blitz and X-Copy or Cyclone compatible (this drive is only available to registered owners of X-Copy Professional. You must provide proof of purchase of X-Copy Professional). The drive comes in a choice of two colours, black or cream.

PC880B WITH BLITZ AMIGA £60
PC880B WITH BLITZ, X-COPY ..£75
PC880B (CYCLONE COMPATIBLE) £65
PC880B IN BLACK CASE £65

POWER DRIVES



PC880E ECONOMY DRIVE ..£49.95
PC881 A500 INTERNAL £45
PC882 A2000 INTERNAL £45
POWER DUAL DRIVE £125

3.5" SYQUEST DRIVE

3.5" removable hard drive from Syquest. Each cartridge stores 105MB.

3.5" SYQUEST DRIVE (17ms) .£739
3.5" 105MB CARTRIDGE £79

BLITZ AMIGA

Backup disks at lightning speeds, and stop all external drives from clicking.Blitz does not let viruses from being written into the bootblocker.(The 1988 Copyright act applies)

BLITZ AMIGA £15

FLOPTICAL DISK DRIVE

The Floptical stores 20MB of data on a 3.5" disk (a SCSI interface is required).

FLOPTICAL A2000 KIT £289
FLOPTICAL A500 EXTERNAL....£389

POWERSCANNER V3.0

The awarding winning PowerScanner is able to scan from 100 - 400DPI in 64 greyscales. The scanning software included allows you to edit and manipulate any image you scan.

The scanner interface includes a through port for a printer.(The Amiga only displays 16 greys)

POWERSCANNER V3.0 ....£99
POWERSCANNER INC. OCR ...£149
OCR JUNIOR SOFTWARE £49
OCR FULL VERSION UPGRADE ..£49
(OCR full version is only available to registered users of OCR Junior)

COLOUR POWERSCANNER

Scan 100 - 400 DPI in 4096 colours, with the Colour PowerScanner.

The scanner interface includes a full through port.

COLOUR POWERSCANNER £239

POWERSCAN UPGRADES

If you consider your scanner system to be inferior to the Power Scanner, we will upgrade your software and interface.

V3.0 UPGRADE (INC INTERFACE) ..£49.95
V3.0 UPGRADE (SOFTWARE, SEND SAE) £15

EPSON GT-6500

High resolution 24-bit colour flatbed scanning from Epson. Scan up to A4 in size on this 600 DPI scanner. Comes with PowerScan software or ASDG software.

EPSON GT-6500 (INC SOFTWARE) ...£799

EPSON GT-8000

Power is official distributor for Epson
High resolution 24-bit colour flatbed scanning from Epson. Scan up to A4 in size on this 800 DPI scanner. Comes with PowerScan software or ASDG software.

EPSON GT-8000 (INC SOFTWARE) .£1199

TRANSPARENCY ADAPTOR

Scan up to 5"x 4" transparencies. Available for the GT - 6500 and GT - 8000 scanners.

TRANSPARENCY ADAPTOR.....£589

DOCUMENT FEEDER

Automatic 50-sheet document feeder for the GT-6500 and GT-8000 scanners.

DOCUMENT FEEDER................£399

A600 MEMORY CARD

1MB RAM with battery backed clock

A600 1MB RAM ....£39.

PC501+ MEMORY CARD

Our RAM board is designed especi for the A500+ computer and comes w 1MB of RAM on-board to expand y memory to 2MB of chip RAM (fits in trap-door).

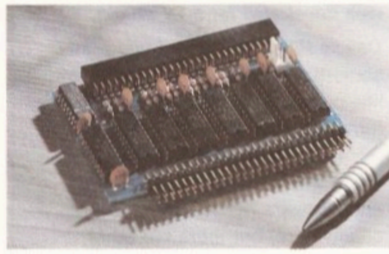
PC501+ MEMORY CARD .....£35.

1.5MB RAM BOARD

Fully supports 1MB of chip RAM and fully compatible with Fatter Agn (requires Kickstart 1.3 and above, compatible with A500+. Your Ami needs to be opened, this may effect y warranty).

1.5MB RAM BOARD ....£

1MB WITH THRU'PORT



Expand your A500's memory up to total of 2MB without disposing of y existing 512K upgrade (works with 1 chip RAM, 512K RAM must be 4 c type or not exceeding 9cm in length. Y Amiga needs to be opened, this m effect your warranty).

1MB WITH THRU'PORT ....£

A500 MEMORY CARD

4 Chip 512K RAM expansion with without battery backed clock.

Free software included (A500+ compati

A500 CARD WITH CLOCK ....£
A500 CARD WITHOUT CLOCK ..£

A500 8MB POWERBOAR

Expand your Amiga from 2MB to 8M RAM. Plugs into side slot, full auto co and full through port.

A500 2MB POWERBOARD £1
A500 4MB POWERBOARD £1
A500 8MB POWERBOARD £2
1 X 4 ZIP £14

A2000 8MB POWERBOA

2MB to 8MB RAM expansion for the A2

A2000 2MB POWERBOARD .....
A2000 4MB POWERBOARD ...£
A2000 8MB POWERBOARD ...£

COMMODORE AMIGA

A wide range of Amiga's are available.

A1200 .... £295
A1200 60MB HD £475
A1200 80MB HD £505
A1200 170MB HD £660
A1200 212MB HD £725
A4000 68040 120MB HD 6MB £2329
A4000 68030 80MB HD 4MB £1129
A4000 68030 80MB HD 2MB £979

MONITORS

A wide range of monitors are available.

PHILIPS CM8833 MK2 .... £229
INCLUDES LOTUS 2, ON-SITE MAINTENANCE
COMMODORE 1084S £199
MULTISYNC MONITOR .... £POA

ICD PRODUCTS



ICD sole distributor. Trifecta is SCSI 2 and IDE compatible. (Trifecta EC is only IDE)

TRIFECTA 2000 LX BARE £139
80MB HD £239
160MB HD £329
200MB HD £399
TRIFECTA 500 LX BARE £195
80MB HD £295
160MB HD £359
200MB £459
TRIFECTA 500 EC BARE £145
80MB HD £279
160MB HD £339
200MB HD £419
AD IDE 2 PRIMA BARE £70
80MB HD £245
160MB HD £309
200MB HD £399
PRIMA 3.5" MOUNTING KIT £29
AD IDE 2 NOVIA 60MB HD £259
80MB HD £299
130MB HD £379
212MB HD £499
NOVIA 2.5" MOUNTING KIT £19
ADSPEED AMIGA £119
FLICKER FREE VIDEO 2 .... £185

ELECTRIC FINGERS CLUB

The Power BBS is a bulletin board service. Phone 0234 841503. Speeds up to 16.8K

SUPRA MODEMS

SUPRA FAX MODEM+ £119
(INCLUDING PSU, CABLE AND SOFTWARE)
SUPRA FAX MODEM 32BIS £249

HOME MUSIC KIT

HOME MUSIC KIT £69.95
MIDI INTERFACE £15.95

GVP A530 TURBO HD

A 40 MHz 68030 EC accelerator.

80MB HD 0MB RAM £549
160MB HD 0MB RAM £649
200MB HD 0MB RAM £699
68882 UPGRADE KIT £224

GVP SERIES 2 HD

External hard drive for the Amiga 500. Expand up to 8MB on-board.

80MB HD £339
160MB HD £409
200MB HD £599
EACH 1MB X 8 SIMM £30

CHIPS AND SPARES

We stock a wide range of parts and spares.

1MB X 8 SIMM £30
4MB X 8 SIMM .... £POA
SIMM 32 X 1MB-60 GVP £59
SIMM 32 X 4MB-60 GVP £179
SIMM 32 X 4 .... £159
SIMM 32 X 8 .... £369
256K X 4 DRAM £5
1MB X 1 DRAM £4.50
1 X 4 ZIP £14.95
1 X 4 DIP £19.95
PCMCIA 2MB £149
V1.3 KICKSTART ROM £24
V2.04 KICKSTART ROM £32
FATTER AGNUS 8372 .... £30
BIG FAT AGNUS 8375 .... £40
HI-RES DENISE £25
GARY £19
PAULA £25
6570-36 KEYBOARD CHIP £19
CIA 8520 .... £9.95
DATA SWITCHES 2 WAY £15.99
DATA SWITCHES 3 WAY £17.99
DATA SWITCHES 4 WAY £19.99
MODEM CABLE £9.95
PRINTER CABLE £6.95
SCSI CABLE £9.95
IDE CABLE FOR A600, A1200 INC.
INSTALLATION SOFTWARE £15.95
A500 POWER SUPPLY £39.95
WORKBENCH 2.04 KIT £75

MISCELLANEOUS

POWERMOUSE £15
OPTICAL MOUSE £29.95
REPLACEMENT OPTICAL MOUSE MAT £10
100 BRANDED DISKS + BOX £69.99
10 BRANDED DISKS £9.95
A1200 DUSTCOVER £5
AVIATOR 1 JOYSTICK £35
INTRUDER 1 JOYSTICK £29.99
MAVERICK 1 JOYSTICK £15.99
PYTHON 1 JOYSTICK £9.99
APACHE 1 JOYSTICK £7.99

delivery 24hr £4.50 48hr £2.50 parcel post £1 (UK mainland only orders under £50)

POWER OPTICAL DRIVE

Fit 128MB on one Optical disk.

128MB OPTICAL INTERNAL £849
128MB OPTICAL EXTERNAL £999
128MB 3.5" OPTICAL DISK £39.95
SCSI CONTROLLER A2000 .... £129

VIDEO BACKUP SYSTEM

Use a VCR as a backup storage device, 200 Amiga floppy disks fit on to a 4Hr tape which can be used for an alternative hard disk backup system. Whats more, you can watch television on your 1084S monitor.

VIDEO BACKUP SYSTEM £59.95

BARE SCSI HARD DRIVES

We can supply SCSI or IDE 3.5" drives in many sizes. These hard drives are suitable for GVP G-Force, GVP or ICD.

80MB £179
160MB £249
200MB £349

2.5" IDE INTERNAL HD

Miniature hard drives for the A600/A1200 these drives come complete with a cable and installation software.

60MB INTERNAL HD £179
80MB INTERNAL HD £210
130MB INTERNAL HD £299
170MB INTERNAL HD £365
212MB INTERNAL HD £430

GVP A2000 HARD CARD

High quality SCSI hard card.

BARE £129
80MB £279
160MB £349
200MB £419

AUTO ROM SHARER

One of the most advanced Rom sharers.

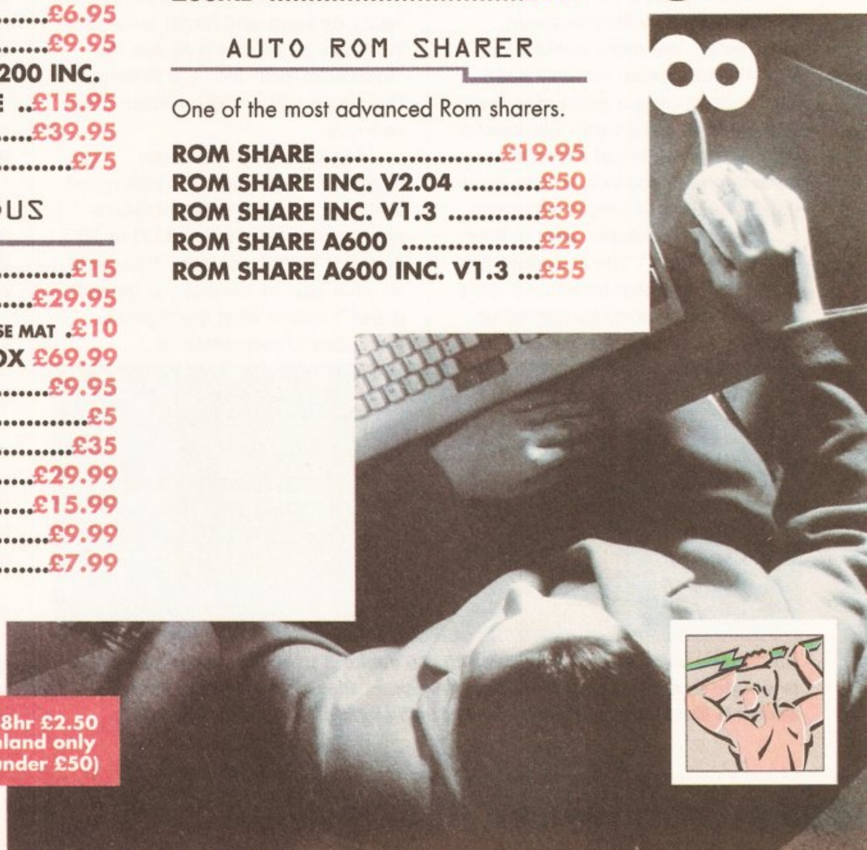
ROM SHARE £19.95
ROM SHARE INC. V2.04 .... £50
ROM SHARE INC. V1.3 .... £39
ROM SHARE A600 .... £29
ROM SHARE A600 INC. V1.3 .... £55

Power Computing Ltd
Unit 8 Railton Road
Woburn Road Ind. Est.
Kempston Beds
MK42 7PN

Tel **0234 843388**
Fax **0234 840234**

Cheques payable to Power Computing Ltd.

tel 0234 843388



Letter imperfect

Having problems with fonts? Jeff Walker punches his way out of a wet paper bag full of typefaces.

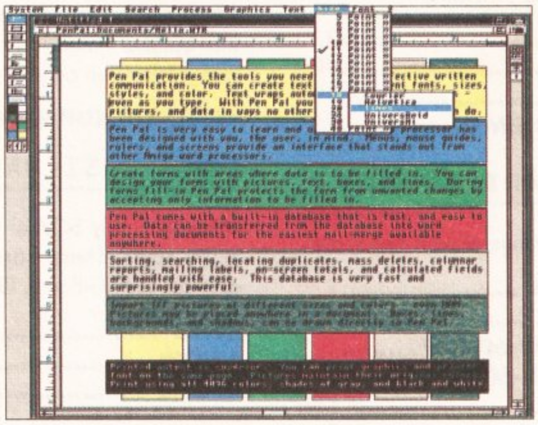
Doesn't it want to make you scream? No software is ever perfect, so you use this DTP program for some jobs, that DTP program for other jobs, and one or more word processors for more simple stuff. Nothing exceptional about this, except that despite the Amiga having a so-called standard font format – namely Agfa Compugraphic – almost every word processor or DTP program either uses its own font system or handles Compugraphic fonts in a non-Amiga way.

The excuses for this mass mutiny are many and varied and quite (yawn) boring to listen to, and at the end of the cliché they all boil down to software developers insisting they can do it faster and more efficiently than can the Amiga. While this may very well be true, it leaves us, the people who have to use the software, in the awkward position of having stacks of floppies or megabytes of our hard disks gobbled up by duplicate fonts directories.

In this series of two articles we'll be looking at the different types of fonts used by Amiga word processing and DTP software, and the way fonts are used by those programs. We'll also be looking at conversion utilities and the reasons why they don't always work, and some specific problems that particular programs have with particular types of fonts.

ONCE UPON A TIME...

The story starts with bitmapped fonts, which are more useful than they at first appear, but only when you're using certain types of software and printers. If the word "bitmapped" confuses you, think of these as screen fonts if you like, a term which describes their use more accurately. Some word processors refer to them as "Amiga fonts". The important fact to remember is that bitmapped fonts were not designed to be printed on printers, they were designed to be displayed on the screen.



Some word processors are all mouth and no trousers – their document displays may look great on screen, but because they use only bitmapped fonts for WYSIWYG work the printed output is simply atrocious.

Bitmapped fonts are contained in directories in your **FONTS:** directory, and each directory has an associated **"fontname.font"** file. Inside the directories in **FONTS:** are files whose names are numbers. These numbers relate to the size of the characters in the font, measured in points, the standard measurement system for fonts – there are about 72 points to the inch. The **"fontname.font"** files associated with the directories of the same name are used by the Amiga to quickly find out what sizes are in that font's directory. If you add a size to a font's directory and forget to run the Workbench *FixFonts* program, the **"fontname.font"** file, and therefore the Amiga, will not know about the new size.

Because they have been designed for display use, bitmapped fonts are mapped to the screen's resolution, which is about 60 to 75 pixels or "dots" per inch, depending on what type of monitor you have. It doesn't matter what the highest resolution of your printer is, bitmapped fonts will print at the screen's resolution, resulting in ugly jagged curves and diagonals, particularly at larger point sizes.

Many's the *Pen Pal* user who has written to *Amiga Shopper* asking how to get better printed output from that program using bitmapped fonts. Alas, you can't.

Wordworth version 1 and *KindWords 3* use a trick to improve the output resolution of bitmapped fonts. Instead of printing with the size of font you have on the screen, these word processors use a font twice or four times that size, then scale each dot in each character by 50% or 25% to bring the size of the characters back to the size you have on screen. It takes lots of memory and quite a long time, but this technique does improve the appearance of bitmapped font output to something approaching the quality of the scalable fonts used by more sophisticated packages.

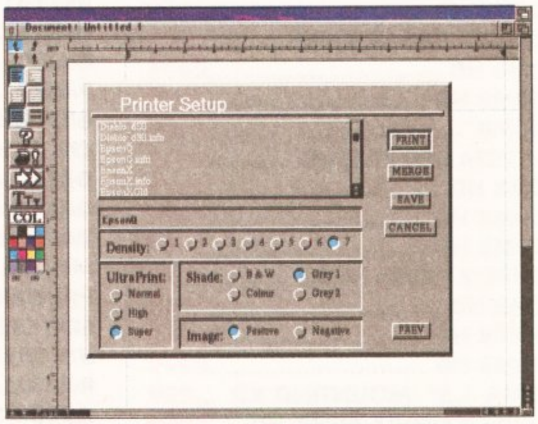
It would appear then that bitmapped fonts are fairly useless if you want a WYSIWYG display and quality results, but this is not the case.

Wordworth 2, for example, has a system whereby it uses bitmapped fonts on-screen, but at print time uses fonts of the same name that are inside the particular printer you are using. The problem here is that most printers don't have that many fonts in them, and they are generally in a few, small, fixed sizes, so design-wise you are fairly restricted.

But if the printer contains scalable fonts you can have the best of both worlds – fast-appearing (but jaggy) bitmapped fonts on the screen, and fast-appearing (but wonderfully smooth) scalable fonts on paper at printout time.

PostScript printers come with a number of scalable fonts, usually 35 of them. On top of this you can download to the printer as many software scalable fonts as the memory inside the printer will allow. With all the fonts you are going to need present in the printer, printable at any size you like, there is no need for the word processing or DTP software to do anything more than say to the printer "Change to this font at this size" whenever it comes across a font or size change.

Word processors that support PostScript output usually come with what the software or manual calls PostScript fonts. But they are not PostScript fonts, they are merely specially-named Amiga bitmapped fonts that the software can recognise and so instruct the PostScript printer to change fonts or sizes. The actual PostScript fonts are inside the printer, not on your screen.

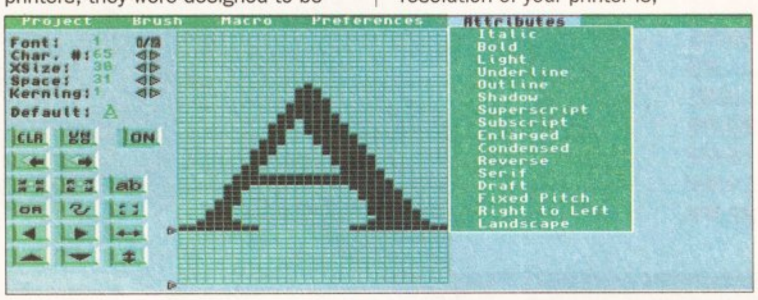


KindWords 3's UltraPrint facility enables it to enhance the output resolution of bitmapped fonts, but at a considerable cost of memory and printout time.

Professional Page doesn't come with special PostScript screen fonts. When you output to PostScript from *ProPage* it looks at the names of the fonts you've used on the screen, whether they be bitmapped or scalable, and simply issues a "Change to that font and point size" instruction. If the PostScript printer you're using doesn't contain a font of that exact name, either in-built or in its download buffer, it will substitute a default font, usually Courier.

TIME AND MEMORY SAVERS

The great advantage of using Amiga bitmapped fonts is that they appear on the screen almost instantly



Bitmapped fonts are of limited use to the desktop publisher, but if you need to create or alter screen fonts for any reason, Cloanto's Personal Fonts Maker is the bitmapped equivalent of Soft-Logik's TypeSmith font utility.

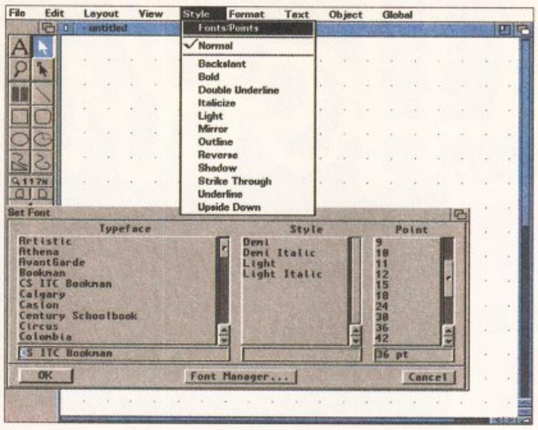
because the bitmapped information in the font file is simply copied straight on to the screen, which is also bitmapped.

Scalable fonts, however, are not held in a bitmapped file format. When you press a key to display a character in a scalable font, the software has to load the large scalable font file into memory, calculate a bitmap of the size you require from the scalable information in the file, then copy that bitmap to the screen. This bitmap is just for display purposes, not for printing. How long it takes to create the bitmap for any given character depends on the complexity and size of the character; on the standard Amiga 500 and 600 it can take so long that even a slow typist will find the screen display way behind the fingers.

The other advantage of bitmapped fonts is that only one lot of font information is in memory; with scalable fonts both the scalable information and the bitmapped information have to be in memory, so more memory is used. Well, strictly speaking only the scalable information *has* to be in memory – the bitmaps can be created on the fly as you type – but because you are likely to be typing characters more than once, software that uses scalable fonts tends to hold or "cache" the character bitmaps in memory so it doesn't have to keep re-calculating them. You gain speed of use at the cost of memory.

What you lose with bitmapped fonts – unless the software you are using directly supports PostScript or specific in-built printer fonts, or employs special bitmap scaling techniques – is printer output resolution.

Before we move on to scalable fonts, there's one other type of bitmapped font that I should mention, the Colorfont. Standard Amiga bitmapped fonts are a single bitplane big – two colours in other words, just like a single bitplane ILBM picture. Colorfonts contain four bitplanes, so they can be displayed in up to 16 colours, just like a four-bitplane ILBM picture. And just as a 16-colour picture consumes more memory than a two-colour picture, so Colorfonts consume more memory than standard Amiga bitmapped fonts.



PageStream's font management system enables you to store fonts neatly on your hard drive or separate floppies, then add the paths to those fonts to its system. The Set Font requester then presents you with a single list of fonts. You never have to worry about which font is in what format or where it's hiding.

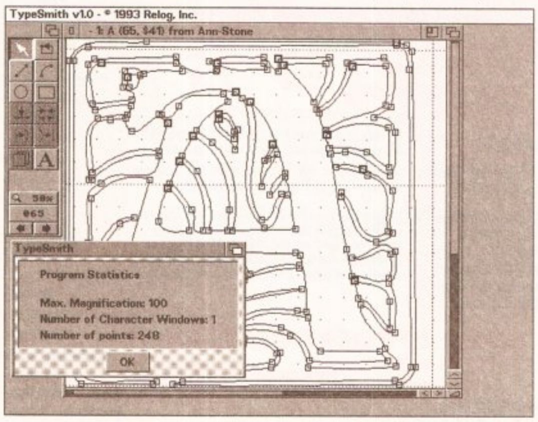
Although the introduction of three more bitplanes makes their appearance more spectacular, Colorfonts remain bitmapped fonts and will print with jagged curves and diagonals. They were designed primarily for use on the screen in art, multimedia and presentation type programs and have no real place in word processing and desktop publishing. In fact the only Amiga word processor that supports them is *Wordworth* 2.

ANY SIZE YOU LIKE

The best known scalable font format is PostScript. There are two basic types of PostScript font, Type 1 and Type 3. Of these, Type 1 is by far the most widely supported.

PostScript Type 1 fonts are often mistakenly or absent-mindedly called Adobe Type 1 fonts. Adobe Systems are the company that invented PostScript, and Adobe certainly produce many Type 1 fonts, all of which are PostScript Type 1 fonts, but called Adobe Type 1 fonts because Adobe are the company that produces them. Many other companies and people produce PostScript Type 1 fonts, and since these are not produced by Adobe they are not Adobe Type 1 fonts.

You might also see these referred to as *ATM* fonts, *ATM* standing for *Adobe Type Manager*, a popular (non-Amiga) font management and display program now widely used, for example, on the Apple Mac. Most often they are referred to as just Type 1 fonts. If a font is labelled just as a "PostScript" font, it is normally a Type 3 font and of very limited use to the Amiga owner.



Some Type 1 fonts are far too complex to be converted into Compugraphic format. I'll be going into detail about this next month, so reserve your copy now...

The Macintosh and the PC have slightly different file formats for Type 1 fonts. All the Amiga programs that support Type 1 fonts support the PC file format. There are a number of conversion utilities available that can convert Mac Type 1 into PC Type 1 – *PageStream* actually comes with some – but considering that almost all Mac Type 1 fonts are readily available in PC Type 1 format, these utilities are almost redundant.

The Soft-Logik desktop publishing packages – *PageStream, Art Expression* and *TypeSmith* – all directly support Type 1 fonts. By direct support I mean that these fonts do not need to be converted into another font format before they can be used. *Final Copy II* also directly supports Type 1 fonts.

Type 1 fonts are split into two files, the PFB file (Printer Font Binary) and the AFM file (Adobe Font Metric). The PFB file contains the complete PostScript description of all the characters in the font, including the dimensions of every character; the AFM file contains all the character spacing and kerning pairs information.

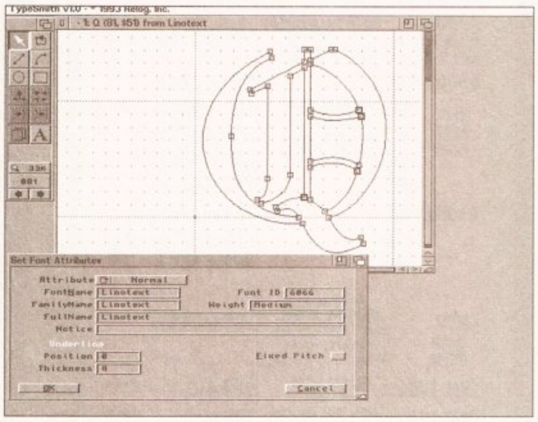
Why split this information into two separate files? Some programs don't require both files. *Art Expression*, for example, is a drawing program and doesn't have any use for character spacing and kerning, so it uses just the PFB file. *Final Copy II* has no kerning feature, so it too has no use for the AFM file and uses just the PFB file. *TypeSmith*, being a font design program, is happy with just the PFB file but will import the AFM file if you tell it to. *PageStream*, which needs to give the professional desktop publisher control over professional things like kerning pairs, requires both the PFB and the AFM file for each Type 1 font.

ANYWHERE YOU LIKE

Despite the fact that the above four programs use Type 1 fonts differently, and despite the fact that each program upon installation will set up and use its own fonts directory, there's no reason at all to have duplicate fonts directories for them.

PageStream has a Font Manager feature whereby you point the program at all your font directories, and many *PageStream* users like to take advantage of this feature and sort or classify their fonts into lots of alphabetical or style-of-font directories. *Art Expression* uses the same system, so you can point its Font Manager to exactly the same directories as those used by *PageStream. Final Copy II* and *TypeSmith* merely put up a file requester when importing a Type 1, which of course enables you to load the font files from anywhere you like.

None of these programs expects or requires the PFB file to actually have a ".PFB" suffix to the filename. If it feels more natural to you to have Type 1 filenames without the ".PFB" on the end, feel free to have a massive renaming session.



The font's filename is not necessarily the same as the actual FontName stored within the file. If you find that TypeSmith or any other program ends up doing strange things with Type 1 fonts, check that the PFB and AFM files for that font really belong to each other. Often, especially in the case of cheap PD or shareware fonts, the two files have actually come from different sources and are at loggerheads with each other.

PageStream doesn't even require the AFM file to have a ".AFM" suffix. For example you could rename all the **"fontname.AFM"** files to **"fontname.metrics"** if you feel that this suffix makes more sense to you. *PageStream's* Font Manager is really very clever. You could even rename the PFB and AFM files for a font as very different filenames – **"My_Scraggy_Font"** and **"The_Metrics_For_Scraggy"** for

continued on page 32

CALLERS WELCOME AT OUR BRANCHES OPEN 9-5.30, MONDAY TO SATURDAY, (10-4.30 SUNDAYS ST ALBANS ONLY)

Hobbyte

COMPUTING
ESTABLISHED 9 YEARS

10 MARKET PLACE ST ALBANS
HERTS AL3 5DG TEL: (0727) 856005/841396
THE GALLERY ARNDALE CENTRE LUTON
BEDS LU1 2PG TEL: (0582) 457195/411281

WARNING

Due to the exchange rate, or manufacturer's changes or due to current RAM shortage, some prices may alter, either up or down, during the several weeks between going to press and the end of the month of issue. We would ask that, where possible, prices be confirmed by telephone before ordering.

HOW TO USE THIS AD

Exclusively from Hobbyte, you can choose your own Amiga and software combination and still benefit from the huge savings only available from package deals.
Want an A500 pack for small children? No problem!
A professional pack for music or programming? It's up to you!

WE WANT TO BEAT ALL PRICES!

CALL US!!

OLD AMIGA TRADE-IN

The best trade-in allowance, extra for peripherals and accessories. Trade in your old machine for a brand new A600/1200/4000/CD32 or even a PC.

After trade-in, equipment is checked and refurbished by our engineers and is then offered at bargain prices, complete with 3 months warranty.

A500s FROM £139
A1500s FROM £199

A600 SD/HD	from 159	HD's + Controllers	from 179
A3000s	from 499	GVP HD8 40/52	209/229
CDTV	179	XT/AT BBoard	79/129
A590 20/40MB	129/159		

OTHER ACCESSORIES - PLEASE ASK.

A4000/30 & 40

A4000/30: AGA Chip Set + 68030 processor, 68882 25/50 MHz co-processor option, 256,000 colours from 16.6M, scan doubling for flicker free display, Mouse, Amiga 3.5"/1.76 MB 3.5" drive, Hard Drive as below, Amiga DOS 3.0 system and utilities, **Gold Service on-site warranty**

A4000/40: As above, but featuring the blistering 68040 processor, with full floating point facilities.

TRADE IN AVAILABLE

HD SIZE MB	68882 FPU MHz	A4000/30 2+2MB STANDARD VERSION	A4000/30 2+4MB SUPER EXPANDABLE VERSION	A4000/40 2+4MB
80	-	989	ADD £100	1889
	25	1099		
	50	1239		
120	-	1089	ADD £100	1969
	25	1199		
	50	1329		
160	-	1279		
214	-	1349		2089
240	-	1175	ADD £100	1969
	25	1299		
	50	1399		
340	-	1299		
	25	1419		
	50	1529		
540	-	1629		2679
	25	1749		
	50	1869		

Super expandable version: ADD £100 • ADD £100 • ADD £100. **2 + 4 MB** version comes with 2MB chip RAM + **one 4MB chip** of fast RAM, for on-board expansion to 16MB. We do not fit two x 2MB chips of fast RAM, which gives on-board expansion of only 8MB.

EXTRAS: Extra 2MB for 2+2 versions £99 • Extra 4MB for 2+4 versions £159 • Microvitec Cubscan 1440 recommended £399.99 •

CD32 CONSOLE

LIMITED STOCKS END AUGUST

CD32 SOFTWARE

15 to 20 titles specially written for the CD32 should be in stock by the time you read this, including Syndicate, Zool 2, Jurassic Park, Chaos Engine, Robocod, Diggers, many of which include a full CD music track alongside the game. About half of existing CDTV titles are compatible. CD32 will also play normal music CDs and CD+G discs

BEST PRICES
BEST RANGE FROM HOBBYTE

£27…

Phone NOW and … first from HOBB…

Includes 2 free games and joypa…

COMING SOON....

Full Motion video add-on - for movies on C…

Floppy Drive - SOON!!

CD32 for A1200 - no dates yet

If you would like updates on the latest in… it arrives, plus first option on initial stoc… ask to be added to our priority customer…

A500/600/CDTV

STARTER PACK
A Must for new users!
Microswitched joystick, "Get the Most from your Amiga" book, 10 Blank discs, 80 capacity lockable disc box, mouse mat, dust cover, Virus Killer.

A500+ and A600 come complete with mouse, modulator to connect to TV, or monitor lead as required, all cables, manuals, operating discs and utilities

	INCLUDED AS STANDARD	ALONE £	PLUS STARTER £	WARRANTY
A500+ 1MB	-	179.99	194.99	12 months return to base
A500+ CARTOON CLASSICS	CAPTAIN PLANET, LEMMINGS, THE SIMPSONS, DPAINT III*	194.99	209.99	12 months return to base
A600 SD 1MB	-	184.99	199.99	12 months at home
A600 SD WILD, WEIRD AND WICKED	SILLY PUTTY, F1 GRAND PRIX, PUSHOVER, DELUXE PAINT III*, 700 CLIP ART SET	199.99	214.99	12 months at home
A600 HD 20		259.99	274.99	12 months at home
EPIC PACK PLUS 30	EPIC, ROME, MYTH, TRIVIAL PURSUIT, AMIGA TEXT, DELUXE PAINT III*, 700 CLIP ART SET	289.99	304.99	
EPIC PACK PLUS 40		324.99	339.99	
EPIC PACK PLUS 64		339.99	404.99	
EPIC PACK PLUS 85		389.99	404.99	
A600 HD 80	-	365.99	379.99	12 months return base
A600 HD 120		415.99	429.99	12 months return base
A600 HD 210		569.99	584.99	12 months return base
CDTV MULTI MEDIA	AUDIO DISCS/CD PLAYER, KEYB'D, FDRIVE, MOUSE, REMOTE CONTROLLER, CADDY, WELCOME DISC, FISH DISC	229.99	244.99	
CBM 1084 ST	TILT AND SWIVEL + LEADS	179.99		1 year
CBM 1940	LEADS. IDEAL FOR AGA	279.99		1 year
Philips 8833 II	LEADS. T & SWIVEL £10	189.99		1 year at home
Star LC100C	TOP VALUE 9 PIN COLOUR PRINTER	149.99	159.99	1year
Citizen 240C	24PIN COLOUR PLUS FREE PEN PAL	259.99	269.99	2 year

EXTRAS: Extra 1MB £25 (A500+) • Extra 1MB £35 • 2Mb PCMCIA £109 • 4MB PCMCIA £169 • Romsharer £45 (A600) • Brickette £45 (CDTV) • PiP Monitor to TV Converter – £114 (monitors)

Return to base HD versions are SD units fitted with top quality 3rd party drives and come with install disc + full documentation. *DPIII needs 2MB for animation on HD models.

A1200

FREE SLEEP WALKER + £10 DONATION TO COMIC RELIEF
(WHILE STOCKS LAST)

1200 2MB	285
1200 +30MB HD	389
1200 +60MB HD	439
1200 +80MB HD	489
1200 +120MB HD	519
1200 +207MB HD	589
Extra 4MB + clock fitted	ADD £180

**CBM APPROVED HARD DRIVES
1200s with hard drives include CBM approved drives fitted by CBM approved engineers, full legal installation/utility disc and documentation and come with CBM on-site warranty service.

FREE WITH ALL 1200s
NIGEL MANSELL AGA, TROLLS AGA

OR FREE WITH 80MB & 120MB VERSIONS
PUBLISHER'S CHOICE RRP £99.99
Inc. Kindwords - WP, Pagesetter - DTP, Artists Choice - Art Pack, Headline Font Pack
Limited - While Stocks Last

DON'T FORGET YOUR STARTER PACK!

WITH ANY COMPUTER
ZOOL, STRIKER, PINBALL DREAMS & TRANSWRITE OR LEMMINGS, SIMPSONS, CAPTAIN PLANET, PLUS DP III & GFA BASIC
ADD £14.99

NO OTHER DEALER CAN BEAT OUR CREDENTIALS

- Multi-million company with 9 years experience in Commodore product and here to stay
- Commodore trained staff are friendly and helpful and are parents, multimedia, educational, games, programming or technical specialists (usually more than one!)
- Open 9-6 pm Monday to Saturday and 10.00 am to 4.30 pm Sundays (St Albans only) for convenient shopping.
- Callers welcome for advice and demonstration at our 1600+ sq ft High St, Town Centre branches
- Same day despatch for most orders received by 5.30 pm; express am and Saturday services available
- Hardware carefully handled and delivered safely and reliably by caged, insured, top name courier service
- Pre-despatch testing on Amiga systems
- Free 30 day courier collection and delivery of NEW replacement.(except product with on-site maintenance)
- Hotline support and in-house engineers
- Upgrade and trade in offers to keep you up to date
- Exceptional after sales service
- BFPO and export welcome

NOT JUST ANOTHER MAIL ORDER COMPANY

For years a major player in Amiga Mail Order, Hobbyte also boast extensive expertise and experience in specification and support of multi-machine and specialist systems. Hobbyte have been recommended and trained by Commodore and successfully won major orders and support contracts from London Boroughs, MOD, educational establishments etc. We are pleased to be placed on tender lists.
This expertise is available to all our customers.

HOBBYTE VALUE PACKS

Hobbyte are famous for their packs, allowing you to choose what you want, whilst still benefitting from package deal savings.
Remember, a bargain is only a bargain when you like what you get! So, if you aren't Wild, Weird or Wicked, Sleepwalker sends you to sleep, Space Ace leaves you feeeling e… Paradroid does worse, if Basic basically isn't you, exercise your options and get real value for money from Hobbyte

TRAMPY'S AND NODDY'S PACK

Fun and educational for 2 to 11 years
(Some help may be required)

WITH AMIGA £45 | ALONE £59

Noddy's Playtime	8 magical learning games at 3 levels, **PLUS** Junior Art pack, keyboard overlay and map
OR Merlins Maths	6 National Curriculum oriented games, stage 2, 7 to 11
The Shoe People	6 games with Trampy and friends, 6 years and under.
OR Fun School 2	The "Fun School" suite have won every award going.
Fun School 3 or 4	5/6 wonderful animated games. 3 to 11 years, specify age.
OR ADI Jnr Reading OR Counting	The loveable extra terrestrial entertains 4 - 7 year olds and helps towards achieving National Curriculum levels 1, 2+ 3
Deluxe Paint II + 700 Clip Art pics	Pics inc. children, Fairytale + Legend characters, Sport, Cartoons, etc.
Hobbyte Primary Educational PD Pack	Containing 10 fun while you learn games
Hobbyte 30 Easy Children's Games Pack	Simple games, or those with very easy levels. Even the youngest will be able to use some of these

SERIOUS USER'S PACK

Interested in music, programming and graphics? Then this pack is for you!

WITH AMIGA £39 | ALONE £49

Easy Amos	THE programming language. Wonderful manual is simple and entertaining - ideal for complete novices
OR AMOS Professional <u>ADD £10 for this option</u>	97% AF rating - the second highest rating EVER given. Learn to professionally create your own games, utilities. Loads of sample progs included
Hobbyte AMOS PD Greats	Dozens of utilities, Protracker music modules, example programmes that no AMOS programmer would be without.
Deluxe Paint III, plus 700 Clip Art pics	Create your own designs to incorporate into your AMOS progs
MIDI Recording Studio & MIDI Interface	If you have a MIDI instrument, this is everything you need to compose and edit your music
OR AmigaVision	Powerful presentation and production tool

STARTER PACK

A must for new users! All you need in one value pack

WITH AMIGA £15 | ALONE £25

10 blank discs	Make working copies of Workbench and other original applications discs as soon as you get them
Virus Killer	Check discs regularly, especially if sharing with friends
Mouse mat	Helps prevent dirt/dust collecting on mouse contacts

Plus Microswitched Joystick, 80 cap. lockable disc box, Dust Cover

HOT BUG GAMES PACK

The top-selling Hobbyte Hot Lot pack now includes the ultimate joystick !!!

WITH AMIGA £44 | ALONE £59

"THE BUG"	The only joystick **ever** to be given a Gold rating **92% AF,** positive single-handed action, small and lovely!
10 "Hot List" Games The GREATEST!	See listing to the right for current **HOT LIST**, or phone for latest changes. Children's games available.
80 Prog. Hobbyte PD Greats Pack II 10 blank discs, mouse mat, 80 capacity lockable disc box, plus dust cover	Includes top games like Battlecars, Star Trek, Computer Conflict, Megaball, dozens of arcade classics, board classics and 'shoot-em-ups', Utilities, Word Processor, Spreadsheet, Database + Desktop Publisher and the ultimate virus killers - a must for every Amiga owner!

HOME APPLICATION PACK

Perfect for all Home Office needs

WITH AMIGA £35 | ALONE £49

Virus Killer Disk,
80 Prog. Hobbyte PD Greats Pack - see 'Hottest Lot Pack'
The Works Platinum
Deluxe Paint III* with animation + 700 Clip Art pics
Digita Home Accounts
Any Two Hot List Titles

WP with UK spell chck, Thesaurus spreadsheet, 'Sideways' utility, database, graphics + comms module
Keep track of credit card and bank accounts, budgets, etc

THE HOT L…

GREAT indivi… packaged ga… BETTER THAN… REST !! (previous RRPs… £39.99 ea…

Thunderbirds (7yrs-…
F1 Grand Prix - 92…
Silly Putty - 90%+ lots …
Elf/Toki/Puzznic (count…
Paperboy II ‡
Hunt for Red Octo…
Colossus Chess @
Challenge Golf
Battleships classic boar…
Graeme Souness So…
Neighbours
Frankenstein ‡ …
Captain Planet
Silkworm Helicopter …
Edd the Duck ‡
Stack Up ‡
Lemmings 92%
Round the Bend
Continental Circus - 8 r…
92% AA@
World Cricket
Bart Simpson
Spiderman/Cptn Amer…
Ice Hockey
Xenon - C+VG Game of t…
Blade Warrior - A Power, …
superb reviews
Toobin Rapid ridi…

‡ PARTICULARLY SUIT… CHILDREN (MAY NEE… @ NOT A1200 COM… TITLES MAY VA…

*DPIII needs 2MB for animation on …

• AMIGA SPECIALISTS • STAR GOLD DEALER • CDTV CENTRE • PHILIPS APPOINTED DEA…

MONITORS/ACCESSORIES

CBM 1084ST including tilt + swivel +2 games....188.95
Philips UK 8833 MKII mon.+leads + on-site....189.99
Tilt + swivel stand for 8833....9.99
CBM 1960 High res monitor....359.99
CBM 1940 dual sync .39 dpi AGA monitor + speakers....274.99
CBM 1942 dual sync .28 dpi AGA monitor + speakers....374.99

MICROVITEC CUB-SCAN 1440 14" .28dp for 1200/4000, infinately variable scan rates between 15KHz (default on boot-up) and 40 KHz for all AGA modes in this range. With tilt and swivwl stand and 3 year warranty....399.99
Microvitec Cub-scan .28dp for 1200/4000 as above, but 20"....1139.99
Adaptor for A1200/Microvitec....12.99

EIZO 9060M Multi-Sync for 1200/4000 models....595.00
CBM 1936 Hi-res SVGA .28dp inc. tilt & swivel....259.99
NEC 4FG Multi-Sync....544.99
PiP View TV tuner+remote with sub picture for monitors....113.99
CBM Flicker Fixer....99.90
ICD Flicker Free Video 2-A500....184.99

FLOPPY DRIVES

Zydec 3.5 external drive, daisychain + on/off....51.50
Cumana CAX 354 3.5 external drive, beige....56.50
PC 880B with anti click + Blitz back up and virus protector....64.99
PC 880B as above, Cyclone compatible....69.99
Dual drive as PC 880B....124.99
Replacement A500 drive....39.99
High density 1.76MB ext. drive for any Amiga (WB 2) + 10 discs....94.99
A2015 high density int 1.76MB 3.5" drive for 1500/2000....78.95
A3015 high density int 1.76MB 3.5" drive for 3000....78.95

HARD DRIVES/ ACCELERATORS

00/2000

HC8/II 40MB....278.99
HC8/II 80MB....314.99
HC8/II 120MB....358.99
HC8/II 213MB....566.99
rce 030 25MHZ 1MB....384.99
rce 030 40MHZ 4MB....684.99
rce 030 50MHZ 4MB....984.99
rce 040 33MHZ 4MB....1284.99
2MB for above....POA
cta SCSI 80MB HD....234.90

00/4000

Mercury 040 28MHZ (3000)1....349.99
II controller for 4000....229.99
est removable HD 88MB....658.99
est for A4000....POA

0

1MB 40MB....479.00
1MB 80MB....579.00
1MB 120MB....679.99
1MB 213MB....749.99
68882....218.99
HD8 42MB....224.99
HD8 80MB....324.99
HD8 120MB....458.99
HD8 REFURBS AVAILABLE...FROM £209
20MB....199.99
Internal 20MB HD....184.99
Internal 60MB HD....249.99

A500 Internal 80MB HD....279.99
A500 Internal 120MB HD....339.99
Trifecta SCSI 80MB HD....289.99
A570 for 2.04 1MB 500....139.99

A600/1200

GVP 85 MB HD 600/1200....274.99
GVP 1230 030 accel for 1200....284.90
GVP1230/40MHZ/4MB 68882 Co-Pro for 1200....479.99
M1230 XA 40MHz....269.99
M1230XA 40MHz 4MB....429.99
M1230 XA 50MHz 4MB....519.99
Microbotics VXL30 25MHz....219.99
VXL 30 40MHz....339.99
2MB Burst RAM for above....179.99

A600/1200 HD UPGRADES

	SELF FITTING* (on-site invalidated)	CBM APPROVED FITTING** (with on-site)
20MB	115	-
40MB	145	-
60MB	175	214
80/85MB	189	275
120/127MB	265	399
209MB	365	549
INTERNAL CLOCK		POA

*with cable & disc ADD £14.99 for Hobbyte fitting
**Including FREE courier collection & delivery

AMIGA 24 BIT HARDWARE

DCTV....376.99
GVP IV + VIU-S....965.99
GVP IV + VIU-CT....1255.99
Impact Vision 24....POA

HARLEQUIN 32 BIT FRAMEMAKER BOARD

Sets the standard by which broadcast quality output and true colour display is judged. Easily integrating with studio + office setups, it ihas been professionally used to storyboard + animation + commercial production in the world of TV.

• **16.7 million colour** photo realistic display • **real time 24 bit animation** • **Optional Alpha Channel** - superimpose high quality graphics onto live signal, or smoothly blend paint images • **Optional Double Buffering** - 2, 24 bit displays instantly available

Unrivalled range of professional s/w support: **TV Paint** • 32 bit paint • **VLab** • real time 24 bit digitiser • **Caligari Broadcast** • 3D anim with virtual reality interface • **Sympatica II** single frame control system • **Art Dept Pro** • image processing inc mixing, scaling, time stretch • **Real 3D** V2 - 24bit modeller + others

H1500 1.5MB....£929
H2000 2MB + Alpha....£999
H3000 3MB +D/Buffer....£1099
H4000 4MB + Alpha +D/Buffer .£1279
Genlock....£199
*H2000 Plus....£1479
*H4000 Plus....£1579

*Plus versions inc. Genlock, extra screen resolutions + modes, 4 Alpha Chanel + more

OPAL VISION

24 bit board v2+ Opal Paint, Opal Presents, Opal Hotkey, Opal AminMATE....589.99
AS ABOVE, ALSO WITH IMAGINE SOFTWARE (Note- this version will only work with Opalvision)....£649.99

IF YOU HAVE PURCHASED OPALVISION, YOU MAY HAVE RECEIVED VOUCHERS AGAINST THE FOLLOWING NEW PRODUCTS., WHICH WILL BE ACCEPTED BY HOBBYTE IN PART PAYMENT

Video Processor for Opal Vision WITH VOUCHERS....647.99
Video Suite for Opal Vision WITH VOUCHERS....647.99
Scan Rate Converter for OpalVision WITH VOUCHERS....647.99
Retina 24 Bit graphics card + 1MB +VD Paint....847.99
Retina 24 bit graphics card + 1MB + VD Paint....339.00
Retina 24 bit graphics card + 2MB + VD Paint....395.00
Retina 24 bit graphics card + 4MB + VD Paint....489.00
V lab 24 bit real time digitiser 1200/600/500 external....334.99
V lab 24 bit real time digitiser 1500/3000/4000 internal....289.99
V Lab 4000/3000 internal SVHS....334.99

FOR SPECIALIST ADVICE PHONE JP ON 0727 856005
SEE SOFTWARE BELOW

EMULATION

G Gate 386sx 25MHz....386.99
GVP 286 for GVPII +530....146.99
GVP 40/4 for 1500....945.99
AT Once....214.99
386 Bridgeboard....199.99
486 Bridgeboard....299.99
Emplant....245.90
Emplant Deluxe....339.90

SCANNERS & DIGITISERS

Epson GT 6500, 600dpi 24 bit A4 inc. Scan s/w....779.00
Epson GT 8000, 800dpi 24 bit A4 inc. Scan s/w....1129.00
Power Hand Scanner, 400 dpi, 64 Greyscale, Powerscan software....88.99
Power Hand Scanner as above, V3 for 1200/4000....104.99
OCR software for Power Scanner....48.50
Power Colour Hand Scanner....219.49
Sharp JX 100 A6 Scanner + scanlab s/w up to 18 bit....469.99
Summa Sketch II A4 Tablet Digitiser/A3 Tablet Digitiser 319.99/529.99

GENLOCKS/MODEMS

Rendale 8802 (1200 compat)....139.99
Rendale 8802 FMC....159.95
Rendale 8802 SVHS/8860....469.99
Hama Genlock 5290....689.99
GVP G-Lock....289.00
Video Pilot v330....1094.94
Rocgen+ 1200 compat....141.50
Rocgen Rockey....189.90
Supra 2400 Modem....78.95
Supra Fax Modem....148.90

SUPRA 2400+ FAX/MODEM

WITH 9600 FAX, 2400 DATA FAX SOFTWARE, ATALK 3 COMMS S/W, MODEM LEADS & POWER SUPPLY....**£148.99**

SUPRA 14440 FAX/MODEM

AS ABOVE, BUT UP TO 14,400 FAX/DATA....**£348.99**

ACCESSORIES & DISCS

A500/600/1200 printer centre..28.99
A500/1200 control centre....34.90
A600 control centre....27.90
Brickette CDTV Joystick adapt. ..39.99
10 Blank DS/DD discs in box....4.99
10 Blank DS/HD discs....6.99
A520 Modulator....29.99
Alien/Batman/T2 Joystick....10.99
Bug Joystick....11.99
CDTV Keyboard....54.99
50 Blank DS/DD discs....17.99
50 Blank DS/HD discs....27.99

EXPANSION

A500 512k Ram Exp+Clock....21.99
A500+ 1MB exp....29.99
A500+ 2MB, exp. to 8MB....149.99
PC1204 4MB exp- clock....179.99
PC1204 4MB exp + 68881 20MHz....219.99

SPECIAL THIS MONTH

PC1204 4MB exp + 68882 25MHz.... 239.99

CBM A600 1MB exp + clock....35.99
A600/1200 2MB exp (card)....137.99
A600/1200 4MB exp (card)....169.99
CDTV 1MB exp + Super Agnus....157.99
A500 Rom Sharer 1.3....37.95
A500 Rom Sharer 2.04....38.95
A600 Rom Sharer + 1.3....49.95
PC1204 4MB exp + 68882 50MHz....329.99
MBX 1200 +68881 14MHz....119.99
MBX 1200 4MB+68881 14MHz....278.90
MBX 1200 4MB+68882 25MHz....358.90
MBX 1200 4MB+68882 50MHz....428.90
2MB version MBX boards above **subtract £100**
CBM 2.1 upgrade kit....74.99
A2065 Ethernet Card....229.95

Chip fitting and board upgrade available, by our qualified engineers....POA

PRINTERS

2YR WARRANTY WITH CITIZEN

	ALONE	WITH STARTER PACK
Citizen 120+D	108.99	ADD £12.99
Star LC20	116.99	
Citizen 90 mono*	144.49	
Citizen 90 colour*	159.49	
Star LC 100 9 pin col	149.99	
Star LC200 col	184.99	
Star LC 24-20 II	218.49	
Star LC 24-100 24 pin	173.49	
Star LC 24-200	209.99	
Panasonic KXP 2123 col	229.99	
Star LC 24-200 col	248.49	
Citizen 124D	176.99	
Epson LQ 100	179.99	
Epson LQ 570	259.90	
Epson LQ 870	469.90	
Epson LQ 1170	569.90	
Citizen S200 24*	179.99	
Citizen S200 24 col*	199.99	
Citizen S240*	249.99	
Citizen S240C col*	259.99	
Citizen 240 and 240C with Pen Pal, RRP £49.99 Ends 30th September		
Epson Stylus 800	294.90	
Citizen S24x col*	325.90	

All HP Inkjets with 3yr RTB warranty

	ALONE	WITH STARTER PACK
UNBELIEVABLE INKJET PRICES!!		ADD £12.99
HP Deskjet 510	**269.90**	
HP Deskjet 500col§	**319.99**	
HP Deskjet 550C§	**629.99**	
HP Paintjet§	**519.99**	
HP Deskjet 1200C	1349.90	
Canon BJ10SX Portable	219.90	
Canon BJ 200	319.90	
Canon BJ 230 A3	369.99	
Canon BJ 330 A3	469.99	
Canon BJ 300	389.99	
Star SJ 48	198.99	
SUMMER SAVER - LOWEST PRICE LASER QUALITY		
OKI OL 400e LASER	529.90	
CITIZEN LASER 6000	POA	
Panasonic KXP 4410 Laser 5ppm	544.95	
Star LS 5 laser	616.95	
HP Laserjet 4L	619.90	
Star LS 5ex 5ppm 2 bin	729.90	
Sharp JX 9500 9ppm	599.50	

Optional 1yr on-site Diamond Service Next day response
HP Deskjet 510....64.99
HP Deskjet 500c,550c Paintjet 1200c....79.99

§Studio driver/Utility (WB 2 & above) highly recommended ADD £39.95

STARTER PACK: 500 Sheets A4 paper, Amiga to printer lead, Universal Printer Stand & Driver * with Print Manager

SOFTWARE

APHICS/CAD

din 4D....213.99
igaVision....17.90
Expression AGA....134.90
Dept. Pro 2.3A....134.90
Pro Prof Conversion....48.99
liance....143.90
gari 24....234.49
gari Broadcast 3....396.90
e Morph....29.99
uxe Paint IV....53.99
uxe Paint AGA....62.99
ney Animation....56.90
ant Suns....49.49
ence....44.50
ert Draw....39.90
lery....39.49
ge FX....179.99
gine v2....149.99
ge Master AGA....139.90
oCAD Plus....63.99

RPHING

zle your friends with the ct-of-the- moment .

rph +, top of the range kage at £138.99, emorph at .99 (RRP 49.99)

sonal Paint AGA....44.95
l 3D Pro....119.95
Draw 3....99.99
Draw 4 AGA....POA
l 3D Classic....78.90
l 3D v2....394.90
a 500 HVT....64.49

CIAL

LA PRO 1.13....£99.99
BYTE PRICEWAS
3.50

a MM200....434.99
pt Anim.4D....198.99
tra Colour....57.99

MPATICA II

our animations slow down al time? SII willturn them into smooth 25 frames/sec masterpieces. Also 24 bit Rotosope video is frame accurately digitised, modified + re-recorded - inc deck controller h/ware....329.99
Software only....189.99

Take 2....36.90
TV Paint 24....679.00
TV Paint Junior....179.99
Vista Pro 3....49.99
Vista Makepath....24.99
X CAD 2000....89.50
X CAD 3000....245.99

VIDEO PROD/ TITLING

A Video + TV Paint V2 ..588.90
Adorage....48.50
AmigaVision....17.90
Broadcast Titler II....173.90
NEW-Broadcast Titler AGA Super High res....239.90
Broad T Font Enhancer....POA
Broad T Font Pack....POA
Deluxe Photolab....51.49
imagemaster....159.99

Montage 24 AGA -titling + grahics for Opal Vision and Impact Vision....POA

Morph+....138.99
Pro Video Plus....137.99
Scenery Anim 4....£54.99
Scroller....59.99
TV Record....189.99
TV Show Pro....51.39
TV Text Pro....79.50
Video Studio 3....115.95
Video Director....123.99
Video Effects 3D....POA
Video Master....49.49
Vidi Amiga 12 V2....74.50

SUMMER VIDI OFFER -

Vidi Amiga 12 with Megamix Master £97.90

Vidi 12 Real Time....134.99
Vidi 24 Real Time....224.90

Video Timelapse VTL - creates stunning timelapse sequences - flowers opening, clouds, with sophisticated light/ motion etc., record trigger inc. deck controller h/ware.329.90
Software only....189.99

EDUCATIONAL

Any Fun School 3 or4....15.99
Any ADI....16.99
Merlin's Maths....16.99
Paint & Create....16.99
Spelling Fair....16.99
See also software packs

UTILITIES/LANGUAGES

AMAX II Plus....249.99
Ami back....39.90
Ami back Tools....39.39
Amos 3D....21.49
Amos the Creator....30.95
Amos Compiler....19.49
Amos Prof.....32.99
Amos Prof. Compiler....24.99
Easy Amos....22.49
Blitz Basic 2....54.95
CanDo 2....93.50
Cross Dos v5....29.75
CygnusEd Pro 3.5....69.75
Directory Opus 4....47.49
Disk Master II....43.75
GB Route +....32.99
GFA Basic....8.99
Gigamem....47.50
SAS/Lattice C....255.99
Quarter back....39.49
Quarter back Tools....43.99
Quarter back Tools Deluxe 97.85
True Print 24....47.90

VIDEO TAPE BACKUP UTILITY

So much faster and easier than floppies, use your VHS video to backup upto 120MB onto one 3 hour tape
£57.50

Xcopy Pro....34.95

APPLICATION

Arena Accounts....82.50
Excellence 3....89.90
Final Copy V2....74.99
Kind Words III....32.99
Maxiplan Plus v4....34.50
Mini Office....37.49
Pagestream 2.2....57.99
AF GOLD WINNER

Pagesetter 3 AGA....42.49
Pen Pal 1.4....34.50
Pers Finance Man +....29.50

Professional Page 4.1 AGA RATED as the current top DTP package by the independant magazines, 94% AF....119.49

SPECIAL THIS MONTH

ProPage 4 and ProDraw 3 - professional illustrator's structured drawing package - Both for Only £159.99

Protext 55....POA
Publisher....32.99
Saxon Publisher....177.95
Superbase Personal 4 ..104.90
Superbase Pro 4....197.99
Typesmith....POA
Wordsworth AGA....72.90
Works Platinum....38.99

MUSIC

AD 10 12 Studio 16 Sampler....349.95
Audio Engineer +2....149.49
Audio Master 4....41.49
Bars & Pipes 2....239.99
Clarity Sampler....104.99
Deluxe Music Const II....POA
GVP DSS....38.99
Midi Interface....19.95
Miracle K'board/Tutor..277.99
Rombo Megamix Mstr....27.99
(see offer with Vidi 12)
Stereo Master....26.99
Superjam....68.50

LEISURE TOP SELLERS

A Train....23.49
AV8B Harrier Assault....27.49
Battle Chess....14.99
Blade of Destiny....24.49
B17 Flying Fortress....22.99
Campaign....22.99
Championship Manager....16.49
Chaos Engine....16.49
Epic....*9.99
F1 Grand Prix....24.99
Flashback....21.49
Gunship 2000....24.99
History Line....21.69
Indiana Jones....23.99
Lemmings 2....18.90
Monkey Island II....23.99
Nigel Mansell AGA....21.99
Putty....*12.99
Robocod AGA....15.69
Sensible Soccer....15.95
Sleepwalker....20.90
Sleepwalker 2MB....*9.99
StreetfighterII....17.49
THUNDERBIRDS!!....12.99
Trvial Pursuit....*9.99
Wing Commander....19.49
Yo! Joe!....
Zool....15.99

*Price applies only with Amiga hardware purchase

CD DISCS

All CDTV titles 15% off RRP.
Pandora....£479
2,000 Clip Art & 99 Sounds
CD32 Discs....Phone

NO DEPOSIT CREDIT AVAILABLE (subject to status), 29.8% APR, written details on application. All major debit cards accepted, no surcharges.

NOTE SEE WARNING TOP LH PAGE

ORDERING:

TELESALES NO: 0727 856005 FAX: 0727 834944

Same day despatch for debit or credit card orders placed before 5pm subject to availability. Alternatively send cheque, postal order, bankers draft or official order (PLCs, Education and Government bodies only) to; Dept. AS, Hobbyte Computer Centre, 10 Market Place, St. Albans, Herts AL3 5DG. Please allow 7 working days for cheque clearance. Subject to availability, despatch is normally within 24 hours of receipt of cleared payment. Prices are correct at time of going to press, however, we are sometimes forced to change them, either up or down. Please check before ordering. Additional services and different packages may be offered in our showrooms, and prices may vary from Mail Order prices. Personal callers are asked to quote this ad to ensure Mail Order packages are offered.

DELIVERY CHARGES: UK MAINLAND (NOT HIGHLANDS)

Small consumables & software items	Despatched by post, please check charges when ordering
Other items, except lasers	Next day courier service, £10 per box
Offshore and Highlands	Please enquire

IN ADDITION WE OFFER THE FOLLOWING EXPRESS SERVICES:

Saturday deliveries	Normal rate plus £15
Am next day	Normal rate plus £8

NO DEPOSIT CREDIT FACILITIES

Credit terms at 29.8% APR (variable) can be arranged for purchases over £150, subject to status. Competitive leasing schemes are also available for businesses, including sole traders and partnerships. Just telephone for written details and application form.

• HP AUTHORISED DEALER • CITIZEN DEALER PLUS • Amiga prices, except where stated are inc. VAT. E&OE

TELE-ORDER (0727) 856005

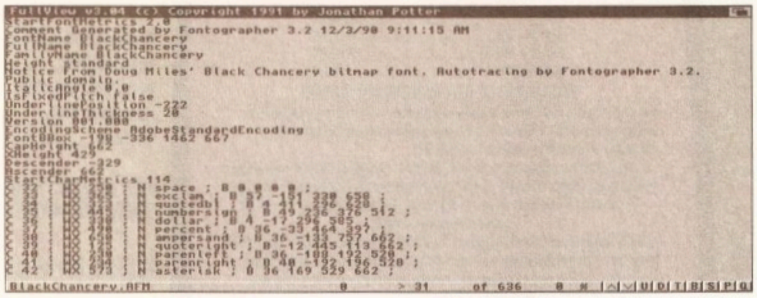
continued from page 29

example – and it would still be able to link the two files as being the PFB and AFM for one font. It achieves this quite impressive feat of intelligence by reading the font name from the contents of the two files rather than taking it from the filenames, and, provided you hit the **Save Default** button, it remembers the link between these files in its **"PSFonts/FONTLISTv2"** file.

Because of the way its Font Manager works, something to watch out for in *PageStream* is Type 1 fonts that have different filenames but the same font name – the filename is what the file is called by the user (you), the font name is the name the original designer gave to the font, the details of which are held within the PFB and AFM files.

The best place to look for the real font name (as opposed to the arbitrary filename) is in the AFM file, which will be a plain ASCII text file that can be viewed with any text viewer or loaded into any text editor. The font name is toward the top of the file, more often than not the third line in the file. To avoid confusion it makes sense to have filenames that are the same as the font names. If *PageStream's* Font Manager comes across two fonts with different filenames but the same font names, only one of the fonts will be available to you in the **Set Font** requester, and *PageStream* may become confused, causing very strange things to happen.

If you are outputting to a PostScript printer with *PageStream,* remember that it automatically downloads to the printer any Type 1 fonts you have used. If you have used many Type 1 fonts, the chances are that your printer will quickly run out of memory, which usually results in it resetting itself, so make sure you use the **Auto-**



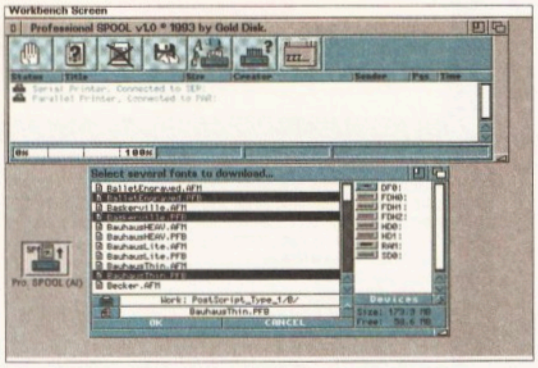
The ATM file for a Type 1 font is a plain ASCII text file. You can discover the font's real name, as opposed to its filename, simply by opening the file in a text viewer or editor and looking at the FontName instruction near the top of the file (but it's not a good idea to change anything!). Note also the Encoding Scheme. If this isn't Adobe Standard Encoding, Gold Disk's FontManager program may have trouble converting the font to Compugraphic format.

unload feature (page 6.11 of the *PageStream* manual) in the **Configure Printer** requester.

When creating PostScript files for transportation to a bureau or firm of printers there is no way to prevent *PageStream* downloading to the file any Type 1 font you have used in your document. Normally this isn't a problem, but if you happen to be using Type 1 fonts on the screen for any of the 35 classic faces that almost every PostScript device has built-in, these Type 1 "soft" fonts will be downloaded to the PostScript file, resulting in much bigger files and longer, and therefore more expensive, print times. Since the PostScript device doing the printing already has these fonts inside it, a lot of time any money is being wasted.

The lesson here is not to use Type 1 fonts on-screen in *PageStream* for displaying any typeface that is already built into the PostScript device that will be doing the printing. Instead use Compugraphic or Soft-Logik outline fonts. *PageStream* will then simply put a "change to fontname" instruction in the PostScript file, and the font of that name in the PostScript device will be used.

But beware of using Compugraphic fonts on the screen that are not not in *PageStream's* database of known fonts, the list in the **"PSFonts/FONTEQUIVv2"** file. If, for example, you use a Compugraphic font called "Scrawny" in your document and then output to PostScript, because *PageStream* knows of no equivalent PostScript font of that name, it will use Helvetica instead. In this situation you would need to get hold of the "Scrawny" font in Type 1 format, or buy *TypeSmith* and convert it yourself of course.



The ProSpool utility that comes with ProPage 4 enables you to download to the PostScript device lots of PostScript "soft" fonts at once, saving you the bother of having to include them in the PostScript file output by ProPage. Note that downloading fonts will consume printer memory – you'll need at least 2Mb of printer memory to hold two or three downloaded fonts in memory as well as the document itself.

WATCH FOR THE KERNING

Talking of converting fonts, we'll finish up this month with a bit about that other *FontManager,* the one that comes with *ProPage* and *ProDraw.* This utility converts Type 1 fonts into Compugraphic fonts and is notorious for freezing half way through a conversion or not converting the font properly.

The reasons for *FontManager's* failures are almost entirely to do with Type 1 fonts that are either badly or "custom" encoded, or because the AFM file doesn't properly belong to the PFB file, or because it is too complicated to be converted to the (mathematically) much simpler Compugraphic format. We're rapidly running out of space here, so we'll discuss this in full next month.

What I want to tell you about *FontManager* this month is that if the AFM file of the Type 1 font being converted has kerning pairs set-up, then *FontManager* reads and transfers this information into the **"fontname.metric"** file it writes out for use with the Compugraphic font in *ProPage.* If you view an AFM file and look towards the bottom of the file, you'll see a line that says **"EndKernPairs".** If directly above that line there is a **"StartKernPairs"** instruction, then the AFM file contains no kerning information. Kerning information in AFM files is easy to spot – if a line has got "KPX" at the beginning of it, it's kerning information.

TypeSmith users should note that when it creates Compugraphic files for use with *ProPage,* it doesn't save the kerning information in the **"fontname.metric"** file, so it would be better to save the Type 1 PFB and AFM files from *TypeSmith* and use Gold Disk's *FontManager* to convert it to Compugraphic.

Next month's article will be almost exclusively about Compugraphic fonts. We'll be looking at downloading to PostScript in *ProPage;* the pros and cons of using them with *PageStream;* why *PageSetter II* doesn't work with some of them; and how to get Amiga programs like *Wordworth, ProDraw, ProPage, PageSetter* and *PageStream* (and as many more as I can think of) to share a single Compugraphic font directory. AS

JARGON BUSTING

Bitmapped fonts – These are fonts stored as little "pictures" of each character at the most commonly used sizes. The problem is that if you use these fonts at other sizes, the bitmapped pictures are simply drawn at a larger size, resulting in jagged curves and diagonals – adequate for screen display (which is what bitmapped fonts are primarily designed for), but poor for printed output.

Font – The DTP term for a typeface or particular style of text. This font is Franklin Gothic; this is Times; and `this is Courier`.

Kerning – Altering the spacing between pairs of letters. For example, in the word AVAILABLE the first three letters, because of their shapes, need to be "squeezed up" more than the last three or you get an appearance of too much white space between them. Professional-quality PostScript Type 1 fonts should have kerning pair information pre-set so you don't have to fiddle with this, but at large sizes you might want to tweak it.

Scalable fonts – Sometimes called "vector" fonts. These are stored in the form of mathematical descriptions of characters, not bitmapped images of them. This means that characters are redrawn at whatever size you specify – which takes longer, but results in smoother curves and diagonals whatever the size of character, not just on-screen but especially in printouts.

WYSIWYG – What You See Is What You Get. This refers to programs that attempt to give you a representation on-screen of what you'll get when you print out – so that italics are shown as italics, and so on, not as control codes.

BREAKING THROUGH
THE TECHNOLOGY BARRIER

Tritec Marketing **DIRECTOR II**



Unleash the ultimate in Graphics Processing Power by upgrading your Amiga or PC with Director II.

A Powerful 32 Bit Graphics Engine for Amiga or PC Platforms

The DIRECTOR II 32 bit system card brings the ultimate in graphics processing power to the Amiga and PC Platforms. When used with a range of readily available software packages the DIRECTOR II allows you to upgrade your office and home Amiga or PC to provide broadcast quality Paint, 3D Modelling, Morphing and CAD capabilities. Consider the uses for a system as powerful as this. Professional video production, animation, CAD, scientific visualisation and many other integrated video/computer graphics applications are all achievable.

FEATURES

- 24 Bit live image capture.
- 8 Bit linear keyer.
- Digitally designed Genlock in 525 or 625 lines giving improved stability.
- Supports all PAL or NTSC broadcast sample rates.
- Supports up to 1600 x 1024 work station screens.
- Scrolling of full screen 24 bit pictures.
- 4 Meg VRAM & 4 Meg CPU DRAM.
- On board TMS 34020 processor with optional 34082 co-processor.
- Powerful expansion port for additional RAM and accessories.
- Available in Amiga or PC versions.

PROCESSING POWER

The expandable design of DIRECTOR II boasts enough VRAM for a double buffered 32 bit display in PAL. The output may be scrolled directly from an internal buffer of 1024 x 1024 pixels in 32 bit. Horizontal resolution is infinitely programmable from 640 to 1500 pixels in 525 or 625 line rates. Increased resolutions are possible using the extra crystal sockets provided.

4 Megs of DRAM are provided, either as a graphics scratch pad or to run stand alone 34020 code, enabling the use of the optional 34082 co-processor for ultra fast rendering calculations. Optional expansion cards may be added to the ports on the top of the DIRECTOR II. These accessory cards fit into the PC slots on the Amiga or PC for user convenience.

SOFTWARE COMPATIBILITY

Director II is supported by many of the leading Paint, 3D Modelling, Morphing and CAD software packages. Animation control is also available and our policy of continued development means we will be constantly working with other software developers to increase the libraries available to us and to include features such as, DVE with 3D effects.

TECHNICAL

The CPU used in Director II is a Texas Instrument TMS 34020 graphics processor running at 32Mhz or 40Mhz (with optional TMS 34082 maths and 3D co-processor).

4Mb of 64-bit VRAM for image storage plus 4Mb of 32-bit DRAM for processor use is provided.

The Director II on the Amiga configures as both a contiguous 4Mb block with separate 64K control window (an '030 or '040 accelerator with extended ram is recommended for use if not already fitted as standard). The PC version is port mapped and configures using standard jumper links.

A high definition version of Director II is available to output 1250 and 1125 lines.

Tritec Marketing
Tritec Marketing Limited
I-Mex House, 6 Wadsworth Road, Perivale, Middlesex UB6 5BB
Tel: 081-991 5591 Fax: 081-566 7285

On the line

It's good news and bad news for comms fans from Dave Winder.

This month, there's some very important news for everyone with any interest at all in comms.

VIRUS WARNING

Attention all comms enthusiasts, a new virus has been unleashed which is aimed squarely at you! One BBS has already been nearly destroyed by this beast.

There is an archive that has been uploaded to some BBSs under the name of **Mcheck.lha,** containing what is supposed to be a program called *ModemChecker*. This utility claims that it tests your modem to make sure everything is working as it should, but that isn't what it actually does. In fact it will return an OK message even if you don't have a modem connected to your Amiga. What it really does is install a nasty little virus that monitors keyboard activity and if it detects nothing for a set period it starts writing obscenities over your hard disk partitions. Reports are that it is very fast and can destroy a hard disk in a matter of seconds.

Take heed and avoid any archive called **Mcheck.lha** or similar, or anything that contains a program called *ModemChecker*. It's better to be safe than sorry!

SUPRA NEWS

All users of SupraFax V32/V32bis modems will be pleased to hear this latest bit of news I have picked up. A lot of users of this modem have complained to me about the amount of line noise they seem to suffer compared to users of other modems, and this could well be the answer. The Supra FaxModem makes use of the Rockwell chipset to do its stuff, and this supports a command that isn't mentioned in the modem's manual.

The command in question is **AT\E1,** which is defined as **Optimise Local Connection**, and this will reduce local echo. The command will configure the modem to minimise the local echo and try to match the local connection. This should have the effect of reducing the amount of line noise which has been affecting Fax transmissions and causing problems with throughput speeds.

To see if you can use this command, type the following from your terminal software:

AT+FMFR? [Return]

This should elicit the response **ROCKWELL.**
Then type:

AT+FMDL? [Return]

This should result in the response **V.32AC.**
Finally, type:

AT\E1 [Return]

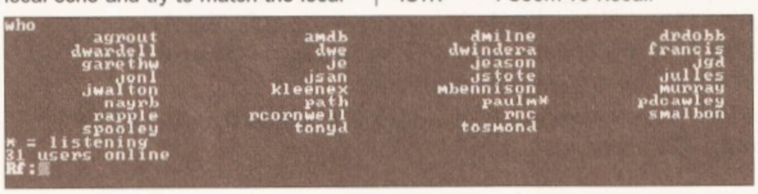
This should get the response **OK**.

WAVEY'S TLA GUIDE

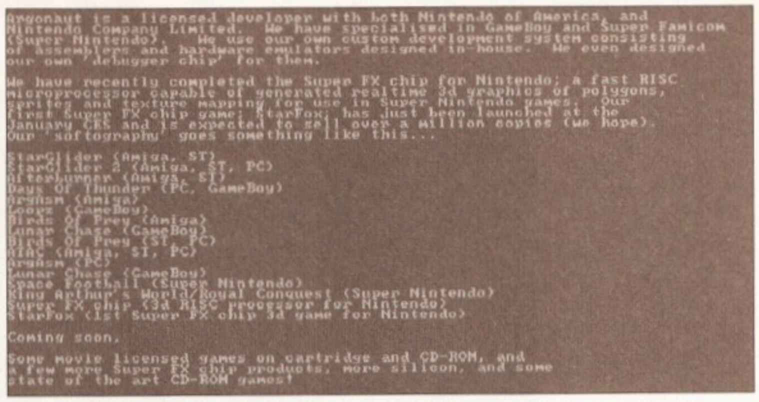
What the hell is a TLA? That's what I hear you all crying, yes even here in darkest Sutton I can hear you. Well fear not for I am about to answer you. Remember a while back I gave you the lowdown on all those smileys? Well, TLAs serve the same purpose as smileys – they help keep your messages short, minimise your on-line time and clarify your meaning, all by reducing a common phrase to a few letters. TLA stands for Three Letter Acronym, which in itself is misleading because most TLA's contain more than three letters! Isn't the world of comms a funny old place?

So if you are on-line and see a strange group of letters sitting there which don't make much sense to you – and assuming this isn't because of the eight pints of scrumpy you've just polished off – read on and be armed to the teeth with the TLAs to reply:

BTW	By The Way
FAQ	Frequently Asked Question
FWIW	For What It's Worth
IMHO	In My Humble Opinion
IMO	In My Opinion
ISTR	I Seem To Recall
NALOPKT	Not A Lot Of People Know That
OTOH	On The Other Hand
PITA	Pain In The Ass
ROFL	Rolls On Floor Laughing
RTFM	Read The Friendly Manual
TIA	Thanks In Advance
TPTB	The Powers That Be



Is there anybody there? Type WHO at the Main: prompt and you get a list of everybody on-line at the same time as you. You can then find out more...



If you ask to see someone's resumé, what you get depends on what that person put there. This is a slice of Jez San's. Who he? Just read the resumé!

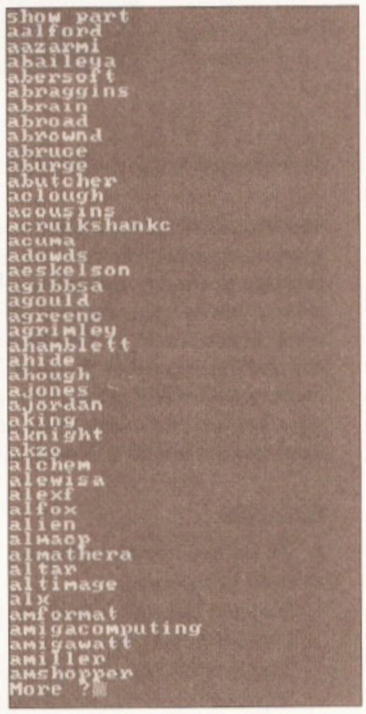
CIX TRICKS 'N' TIPS

The wonderful thing about conferencing on a network such as CIX (the Compulink Information eXchange) is the social contact, the fact that you are talking to real people out there. But who are they? This month I'll show you the easy way to find out who's who on CIX.

First of all, you may like to see who is actually online at the same time as you. To do this, just type **WHO** at the **Main:** prompt. This will result in a list similar to the one in the screenshot below left.

Now that we can see who is actually on-line, you may like to know a bit more about them. I have spotted a major player in the world of computer games in the list, so let's find out more. To do this you need to get his resumé. A resumé is a text file you can write yourself, about yourself. It can be long or short, factual or funny, or just plain daft. My resumé is incredibly serious and certainly does not feature a naked lady in any shape or form. But back to the point, Wavey: to get the resumé just type **Show Resume** followed by the username, at the **Main:** prompt. The superstar I have spotted is Jez San, **jsan@cix**. So typing **Show Resume jsan** results in Jez's personal biography being displayed. Part of it is shown in the screenshot at the top of the page and tells you just why he's considered such a big cheese in the games world.

If you would like to know who is sharing the conference you are in, you can easily find that out too. Using the **amiga** conference as a fairly natural example, let's see how you do it. It couldn't be easier – just type **SHOW PART** at the **Main:** prompt and you will get a list of all members of that conference. This can run to many screenfuls – for example the **amiga** conference has over 700 members. The screenshot below shows the sort of list you will get – this is only the first screenful and just happens to finish off with those lovely chaps at *Amiga Shopper* (good magazine that, you should buy a copy). To find out more about any of them, just use the **Show Resume** command as described earlier. AS

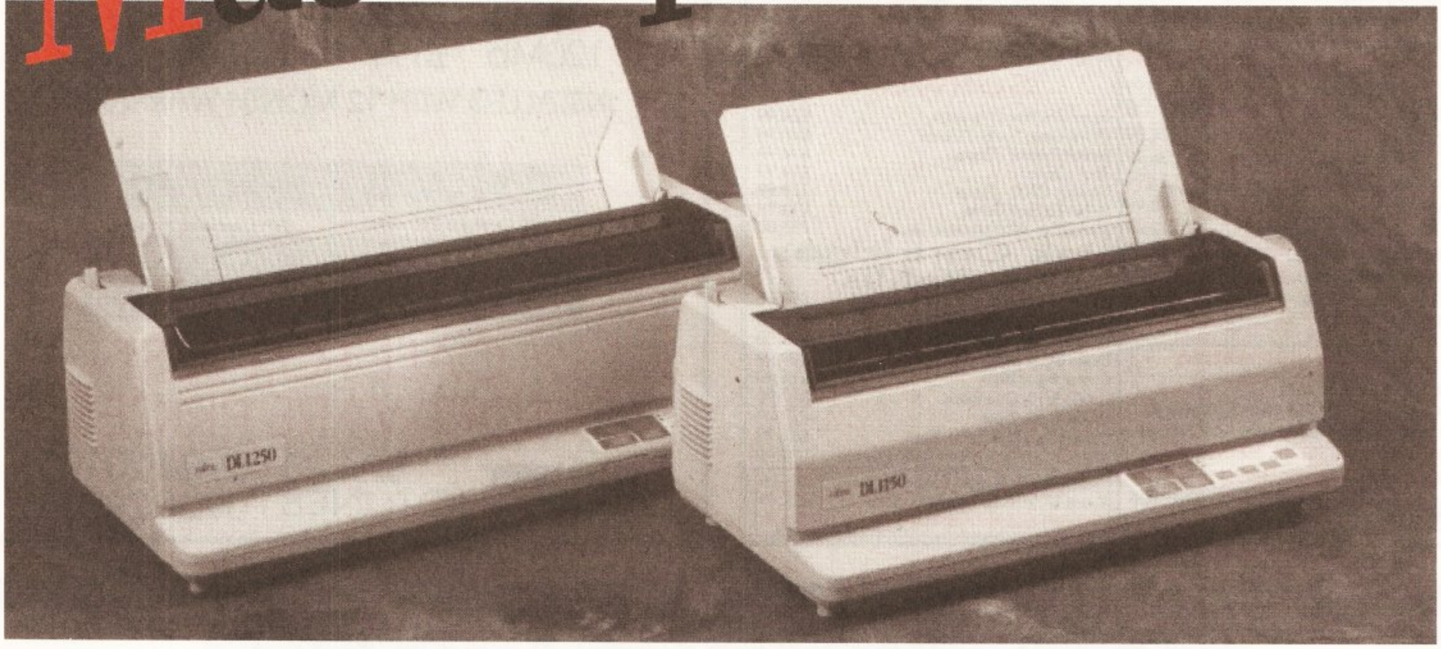


Who's sharing your conference? This is a small part of a big part list .

YOU READ IT, I'LL WRITE IT

Is there a particular comms-related subject you would like to see covered in some depth in the pages of *Amiga Shopper?* If so, just let me know. If enough people contact me either by writing to me care of *Amiga Shopper* or by EMail as **dwindera@cix.compulink.co.uk** then I will do my best to feature your requests in future issues.

Two Smart Masterpieces – in Colour



The DL1150 Colour and DL1250 are two smart masterpieces from Fujitsu – the second largest computer manufacturer in the world. Thanks to a unique design, these printers will save you a lot of valuable desk space.

The DL1150 is the smaller model and prints in colour on a A3/portrait or A4/landscape. If you need larger printouts, the DL1250 is the perfect choice – it prints on A2 format.

The DL1250 is monochrome but can easily be upgraded to a colour printer by use of an optional colour kit.

The 24-pin dot matrix technology offers high resolution. Many resident fonts provide a multitude of printout options. You can easily connect your computer with our printers, thanks to Fujitsu's unique DL-menu. Drivers are available, both for Windows and Amiga.

For further information please contact your Fujitsu representative, Amiga-Warehouse, Tel. 0753-554338, Fax 0753-551211 or FUJITSU PRINTER PRODUCTS OF EUROPE, Tel 081-573-4444, Fax 081-813-7371 directly.

CALL FOR NEW LOW PRICES!

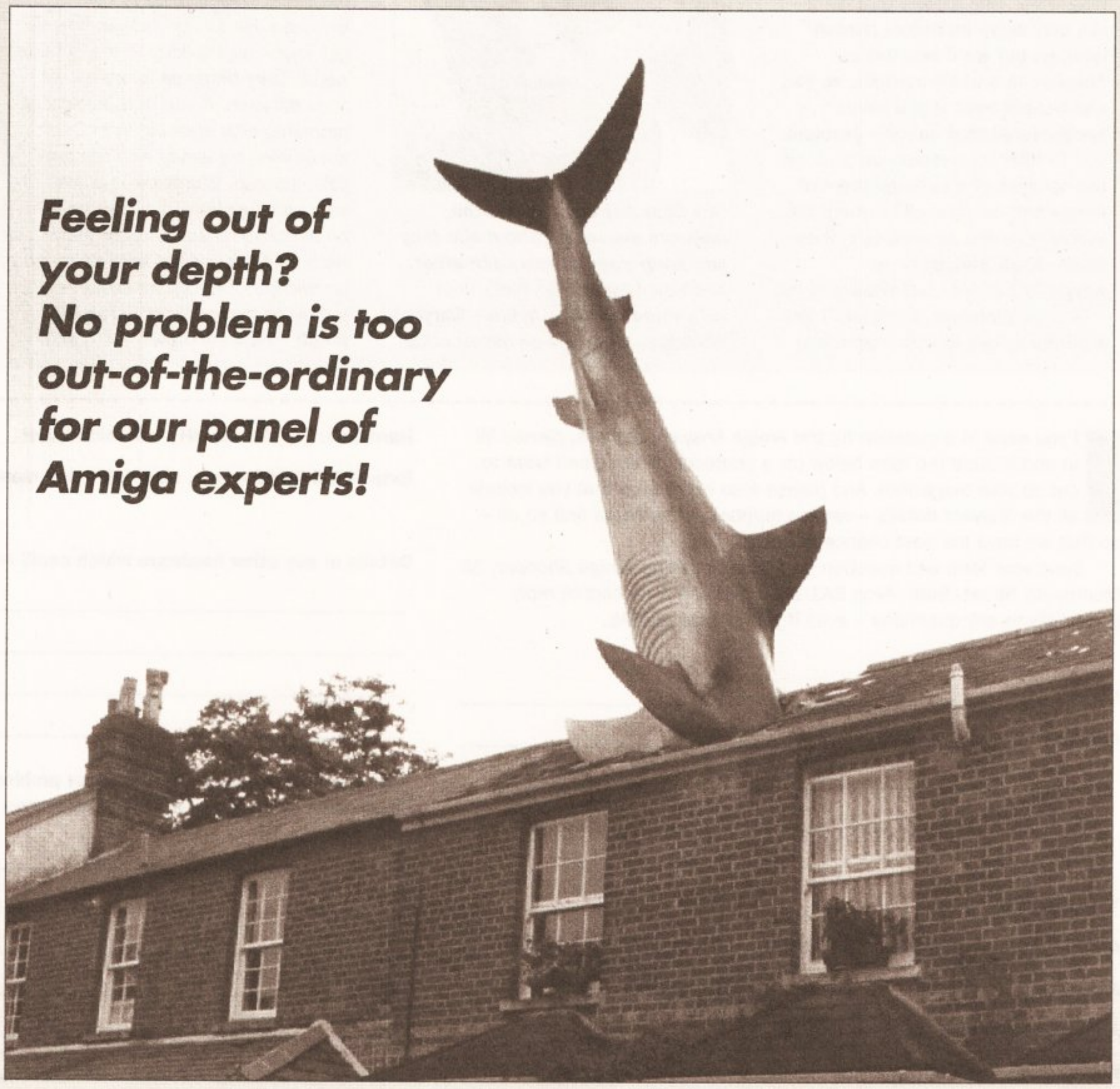
FUJITSU

COMPUTERS, COMMUNICATIONS, MICROELECTRONICS

CONTENTS AT-A-GLANCE

OUR EXPERTS TACKLE YOUR REAL-LIFE PROBLEMS

AMIGA ANSWERS



Feeling out of your depth? No problem is too out-of-the-ordinary for our panel of Amiga experts!

USING THE ICONS TO FIND WHAT A QUESTION'S ABOUT

BEGINNERS Questions that raise basic problems or deal with elementary issues feature this icon.

GENERAL This icon's for general Amiga-related queries or questions that don't fall under other headings.

DTP This is the icon you'll find next to queries related to the whole area of desktop publishing.

MONITORS Questions about monitors, including television display problems, will feature this icon.

HARDWARE This icon's for queries relating to general hardware, excluding kit covered by other headings.

BUYING This icon indicates a question asking for buying advice in any area, hardware or software.

PRINTERS If a query concerns printers, printer drivers and hardcopy problems, this is the icon you'll find.

CODING Questions about coding (no matter which language) will have this icon next to them.

VIDEO This one's for queries about using your Amiga with video hardware such as genlocks or digitisers.

MUSIC This icon is for questions about MIDI, sampling, synthesizers and music software.

SOFTWARE Queries about specific software packages or programs have this icon next to them.

COMMS If your question relates to comms, including modem problems, this is the icon we'll use.

NO PROBLEM!

Hello and welcome to this month's information-filled nine pages of Amiga Answers – the magazine within a magazine. Our mission: to provide the most definitive and informative question-and-answer section of any Amiga magazine. This means that we'll not only solve individual readers' queries, but we'll also set our answers in a wider context, so you can benefit even if you haven't encountered that specific problem.

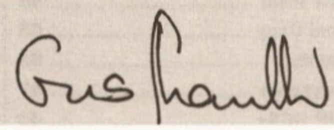
To fulfil our mission we draw on the services of a talented team of Amiga enthusiasts, all of whom are widely regarded as experts in their fields. **Mark Smiddy** is our AmigaDOS expert. **Jeff Walker** is our DTP correspondent. If you can't get a printer to talk to your machine or need the lowdown on fonts then he's your man. Then there's **Gary Whiteley,** an expert on the amazing video capabilities of the Amiga. **Jason Holborn** has mastered the intricacies of AMOS, and with his advice you'll be able to do likewise. Jason also has an encyclopedic knowledge of what's available in the PD world. If you have a query about comms then we'll set recent star of the small screen **Dave Winder** on the case. He'll soon explain how to get your Amiga talking to the outside world. **Toby Simpson** is our expert code clinician. If you're experiencing problems with anything from C to assembler, try taxing his little grey cells instead. **Wilf Rees** is a man with an education – well, an expert on educational software, at least. He's also got a jolly useful all-round knowledge of Amiga hardware. Last but by no means least is **Jolyon Ralph** – he also knows lots about hardware and he's just the chap to help you get your disks to drive or your CDTV to... um, work, really.



Gus Chandler coordinates the Answers experts. Without him they just keep walking into each other...

So that's our batch of boffins – the rest is up to you. Keep those problems rolling in. This month we've included a tip from one of our readers, John Ward – for which he picks up a crisp ten pound note. If you've got any tips or hints to share then send them to us and you could soon be a tenner richer. Please mark the envelope "Tips".

One final point. Please don't include an SAE with your questions – we simply receive too much mail to be able to offer a personal reply service. Read and enjoy.



If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you.

Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW. Sorry, but we cannot reply personally to any questions – even if you include an SAE.

Name: ______________________

Address: ______________________

____

____

Your machine:

A500 ☐ **A500 Plus** ☐ **A600** ☐ **A1000** ☐ **A1200** ☐

A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the "Insert Workbench" prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.x** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5in/5.25in) as DF_: Manufacturer __________

Extra drive #2 (3.5in/5.25in) as DF_: Manufacturer __________

Hard disk: ___Mb as DH_: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

____

____

____

____

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

____

AS 30

SCROLL CORRUPTION

I cannot believe I am the only person in this country who has tried to open a screen 1,000 x 1,000 pixels using AMOS Professional and print bobs to the second half. It clearly says in the users manual that I can do, but all I get is screen corruption whenever I try to reveal the bottom part of the screen using the "Screen Display" command. When I contacted Europress, they claimed that the new A1200 version of AMOS Pro (1.12) would solve the problem, but it hasn't. Even when I contacted Europress again, they were stumped. Can you help?
V Parkes
Borehamwood
Herts

There certainly seem to be a few problems with the **Screen Display** command when used with such large bitmaps, so my solution would be not to use it. Sounds drastic, I know, but you can get exactly the same effect using AMOS's **Screen Offset** command. Here's a short listing that will open up a 1,000 x 1,000 bitmap and will then enable you to scroll around it using the joystick. Obviously it will need to be adapted for your own particular needs, but other than that it does the same job beautifully! ***JH***

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

```
Rem *** Legal 1000x1000 Scroller
Rem *** By Jason Holborn, AS
Screen Open 0,1000,1000,16,Lowres
Screen Display 0,128,48,320,256

For C=0 To 200
  X=Rnd(1000) : Y=Rnd(1000)
  Text X,Y,"AMIGA SHOPPER!"
Next C
X=0
Y=0
Repeat
  If Joy(1)=1 Then Add Y,-4
  If Joy(1)=2 Then Add Y,4
  If Joy(1)=4 Then Add X,-4
  If Joy(1)=8 Then Add X,4
  If Y=-4 Then Y=0
  If Y=748 Then Y=744
  If X=-4 Then X=0
  If X=684 Then X=68
  Screen Offset 0,X,Y
  Wait Vbl
Until Joy(1)=16
Screen Close 0
```

A LEADING QUESTION

I have a GVP Series II hard drive connected to my A500 Plus. Is there a lead available to link this with my computer so that I can hide it out of the way, in a box under my monitor?

Those PC Emulators advertised in PD libraries – do they really work? I would like to run DOS/Shell, *Word Perfect* and *Lotus 1-2-3*.
S Green
West Midlands

Although it's theoretically possible to create a cable to attach your hard drive to the side of your A500, it would be difficult to use a cable any longer than about an inch, or you would suffer from crashes and other problems due to the distance between the RAM (and to a lesser extent the hard drive controller) and the motherboard.

The *PC-Task* demo advertised in PD libraries is just that, a demo version. It has Save disabled so you cannot write to disks from the emulator, but you can try it out on your machine. (There are several libraries out there supplying the full, commercial, version of *PC-Task* in their PD collections. Such versions are pirated, and the libraries in question will soon be in deep trouble.) *PC-Task* should be able to run DOS, *Word Perfect* and *Lotus 1-2-3*, albeit rather slowly on a standard A500 Plus. You will not be able to run Windows 3.1 on the emulator, or any other software that requires a VGA display. ***JR***

DMI AND DIGITAL EDITMASTER – A CORRECTION

In a reply to a query from H C Tsui of Hong Kong in *Amiga Shopper* 29, we said that DMI, manufacturers of the Digital Editmaster video editing system, had gone out of business. In fact Digital Editmaster is made by Digital Micronics Inc. an American company which has *not* gone out of business and bears no relationship to Direct Marketing International PLC, a UK company which *has* gone bust. Digital Editmaster is still available for around £1,899 from Chartscreen (☎ 0425 475515, fax 0425 475525) or White Knight Technology (☎ 0992 714539). Apologies for any confusion.

SLOW PRINTOUTS

***PageStream* prints out pages to my DeskJet 500 very slowly. *Deluxe Paint* prints them much faster. Would it be possible to save a *PageStream* file to disk, or better to RAM, and then print it using some other program that can do the job faster?**
J H M Joel
Capdepera
Mallorca

The main reason *Deluxe Paint* prints faster is because it is not sending so much data to the printer.

When printing at 300 dots per inch, an A4 *PageStream* page is about 2480 dots wide by 3,500 dots high, which is about 8.7 million dots in all. A typical *Deluxe Paint* "page" is usually the size of the screen, let's say 640 by 512 dots (or pixels, same thing), which is about 328,000 dots in all. So the *PageStream* page contains about 26 times more data than the *Deluxe Paint* page.

Before *PageStream* can send the data to the printer it has to create the page in memory at the specified printer resolution. Then those 8.7 million dots have to be sent down a cable to the printer. A parallel cable has eight data lines, so the dots go in groups of eight – eight dots get sent, the printer receives them and sends a message back to say it's ready for more, eight dots get sent... and so on until all 8.7 million (plus various printer control codes) have been sent and printed. All of this takes time.

The maximum speed at which the printer accepts data, prints it and sends a message back asking for more is governed by chips inside the printer. It can't be made to go faster.

The maximum speed at which data gets sent down the parallel cable is ultimately governed by chips inside the computer. It cannot be made to go any faster. But the printer driver is the software that actually sends the data, and the transfer rate is in effect governed by how fast the printer driver is. If it has been written poorly in C, it may send data slowly; if it has been written efficiently in Assembly Language it may send data as fast as the parallel port can take it. The **HP_DeskJet** driver that came with your Amiga isn't particularly fast; the one provided with *PageStream* is a little faster; but an even faster printer driver will certainly speed up printouts. The fastest and most efficient DeskJet drivers available for the Amiga come with a printing utility called *Studio* (available from JAM on ☎ 0895 274449).

The speed at which the page gets created in memory is governed by the speed of the central processing unit (CPU) and the type of memory available. This can be made to go faster, by fitting a faster CPU and some faster memory – or in other words, an accelerator board with some 32-bit RAM. So a faster

CLIP ART PIC TIP

***Amiga Shopper* reader John Ward from Derby wins £10 for this tip.**

Importing bitmap graphics into *PageSetter* can throw up a few problems if you do as I do, importing them as images prepared in *Deluxe Paint*. I have an Amiga 1200 with hard disk and a Citizen 240C printer, but the following tips are applicable to any Amiga set-up with or without hard disk.

Most of my clip art has been obtained from Artworks and EM Computer Graphics, both of which are excellent and which I can highly recommend. Artworks is especially good because their disks are sensibly categorised with the graphics all in the same resolution and arranged on the page in rows, making them extremely easy to use as supplied. EM are in a variety of formats and rather fragmented, but are good quality nonetheless. It is a good idea to arrange your disks into sensible categories and subjects into directories if you are accumulating a large collection. Mine sit in a special clip art directory in the *DPaint* drawer with subdirectories for different subjects. This makes them much easier to find when required.

Because there are often many graphics per page, you need to process the image you want using *DPaint* first before it is ready for importing into *PageSetter*. It's not necessary, but I stick with medium resolution for consistency. Before starting, set up the *DPaint* page to the required resolution and to two colours (black and white). Load the graphics page from your clip art source and extract the required graphic as a brush. Clear the screen and size the brush to produce an image which fills the screen approximately. Now you can either save as a brush or stamp the brush on the page and save as a picture. Before you do, here is the essential tip: make sure before you save that the AUTOGRID option is *off*. If you don't, the image when imported into *PageSetter* will print distorted and in an incorrect position on the page. This can be puzzling when everything looks okay on the *PageSetter* screen boxes.

I'm sure many *PageSetter* users have found this out for themselves, but I've never seen it mentioned anywhere. With my Citizen printer I can set the print resolution to 360x360 dpi and the results are really very good, rivalling lower-end laser printers.

printer driver, or a faster CPU, or both are the only ways to dramatically speed up printouts from DTP and paint program.

It is possible to specify in *PageStream's* **Configure Printer** requester that the page should be printed as a disk file. (Judging from your question about *Protext* I think you've already discovered this.) This file can be printed using the normal AmigaDOS **Copy** command, like this:

```
Copy DH1:PageStream/☛
        letterhead to PAR:
```

This will speed up the actual printout itself, but if you add on the time while *PageStream* was "printing" to disk, I think you'll find that the total time taken to print the page is only fractionally faster than when *PageStream* is printing directly to the printer. But it *is* faster. ***JW***

FLEXIBLE BOOTS

GENERAL

I have installed a switch that enables me to switch between 1.3 and 2.04 ROMs. This allowed me to use my old software. I recently purchased a new hard disk that autoboots only from version 2.0. I wish to be able to also boot from version 1.3. I have heard that it is possible to partition the hard disk, one for 1.3 and one for 2.0, in such a way that makes it possible to boot from 1.3 or 2.0, depending on the ROM that is currently switched on. Is this possible? If so, how do I need to set up my hard disk? What should be in my startup-sequence? And is it possible to install a hardware switch that will disable my hard disk? My controller (MultiEvolution v3.0) does not have this function.
D Drennen
Bremen
Germany

Unfortunately I know nothing about the MultiEvolution controller, which I do not think is available in the UK, but based on the information you gave I suspect that it is not possible to boot from 1.3 in the way you suggest.

The only machines that can boot from either a 1.3 or 2.04 partition depending on what ROM is present are the early Amiga 3000s with the SoftKick ROM. These worked exactly as you suggest, with two partitions each with its own Workbench set up (and normal startup-sequences).

Unfortunately (again) if your controller does not have a disable switch then there is little you can do to disable it, short of removing the board. Your best option may be to upgrade to a new controller that supports the features you want. Both the Commodore A2091 and the GVP HC8+ will boot from either 1.3 or 2.04 (although from the same partition, so you will need a complex startup-sequence and both sets of Workbench files on the same drive) and both can be fitted with disable switches. ***JR***

HAND SCANNER ADVICE

VIDEO

I am thinking of buying a hand scanner and would much appreciate any advice you could offer me as to which ones are best, either black and white or colour. Also, how far would I need to expand my current set-up to get best results? I have a Workbench 1.3 Amiga 500 with a 512K memory expansion and a second floppy drive.
J E Smith
Middlesbrough
Cleveland

Scanning is one of the most memory-intensive things you can do on a computer. Even a small black and white scan at 400 dots per inch can require a very large amount of

continued on page 45

JARGON BUSTING

Bitplane/bitmap – A bitplane is an area of memory where every binary bit corresponds to a pixel on the screen. One bitplane represents a monochrome image; several can be overlayed (creating a bitmap) to represent a colour image.

Emulator – A device, either hardware or software, that enables programs written for another machine to be used on the Amiga.

Printer driver – A program that sits in between an applications program producing output and the printer. It converts any codes describing text and graphics format into a form suitable for a specific printer.

Scanner – A device which converts an image on paper into a digital form which can then be used in a paint package on the Amiga such as *Deluxe Paint*.

Startup-sequence – A program which is executed every time the Amiga is switched on or reset. It sets up the system so that it is usable from Workbench, and may be customised by those who have unusual hardware or software requirements.

VGA – Video Graphics Array. A high-resolution colour or monochrome graphics system for the IBM PC, with 80 columns by 25 or 50 line text and a huge range of colours – sometimes 256 on-screen at a resolution of 1,024 x 768.

FIT TO PRINT

A4 OR NOT A4

PRINTERS

I have a problem with *PageStream 2.2*, configured to use the BJ130e printer driver with the BJ-10ex under BJ-130e emulation, as stated on the Canon printer drivers disk.

I am using A4 paper, 210mm by 297mm. In the *PageStream* manual it says I should set the printer page length to the actual size of the paper I am using. When I do this the printer prints only about seven-eighths of the page.

I have tried many different printer and page sizes, all to no avail. If I do get the printer to print a full page and ask *PageStream* to print more than one copy, the starting point on the page prints lower and lower every time.

Please tell me what settings I should use for both A4 and A5.
Mike Duffield
Bury St Edmunds
Suffolk

For cut sheet paper – separate, single pages, in other words – the BJ-10ex has a minimum top and bottom margin of half an inch (12.7mm). Nothing you can do about it, that's how it works. Almost all printers impose minimum top and bottom margins for cut-sheet paper. This is because the printer needs a bit of paper at the top to grab hold of in order to feed the paper in, and a bit of paper at the bottom to grab hold of in order to feed the paper out. And for the BJ-10ex that "bit of paper" is half an inch, top and bottom.

So, the length of paper you can actually print on to when using an A4 sheet is not 297mm, it's 297mm minus an imposed 12.7mm top margin, minus an imposed 12.7mm bottom margin, which equals 271.6mm. Or 10.69 inches in old money.

And that's the maximum length you should specify as both your on-screen page size, and your **Paper Size** in *PageStream's* **Configure Printer** requester. To make it easier to remember, round it to 270mm or 10.5 inches if you like.

For A5 paper, which is 210mm long, the maximum length for the BJ-10ex should be 210 minus 12.7 minus 12.7, which is 184.6mm (about 7.25 inches).

GIVE HIM AN INCH ...

PRINTERS

I have a Xerox 4030 laser printer which emulates the Hewlett-Packard LaserJet and I can only print 10 inches on A4 paper. There was a patch printed somewhere that re-set the HP_LaserJet driver to give the full 11 inches, but either I've lost my patched version or it doesn't work on the Amiga 4000 under Workbench 3. Please help, I'm absolutely desperate for another inch (ooer!).
Steve Calkin
Canvey Island

The **HP_LaserJet** driver that comes with Workbench 2.1 and 3 recognises the DIN A4 paper size in Workbench Printer Preferences, and from my experiments it would appear to specify A4 size as being 7.75in by 10.66in. This is consistent with the laser printer imposing its own half inch (ish) top and bottom margins and quarter inch (ish) left and right margins – add on those and you get 8.25in by 11.66in, which is A4 near as damn it.

If you want to get even closer to the bottom of an A4 page, then select the US Legal paper size in Workbench Printer Preferences, which is 14in, although the driver again assumes a printer-imposed half-inch top and bottom margin, so the actual printable length is 13in. Keep in mind that if your laser printer imposes a half-inch top margin, anything on an A4 screen page that is below 11in will not be printed, or (depending on the program doing the printing) may be printed on the top of the next sheet of paper. ***JW***

• For more information on how to get your printouts right, see the special feature in last month's *Amiga Shopper*. If you missed that issue, turn to our back issues service on page 108.

New Horizon Computers

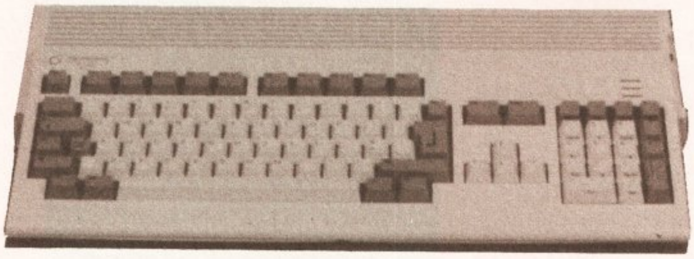
The Hard Drive Specialist

Amiga 1200/Hard Drive

THIS MONTH'S SPECIAL OFFERS

80 MEG
£465.00
INC VAT & DELIVERY

40 MEG
£389.00
INC VAT & DELIVERY



Other
Sizes Available
Call for Latest Prices

INCLUDES 2 YR EXTENDED WARRANTY

HARD DRIVE DIY KITS FOR A1200 OR A600

INCLUDES HDTOOLBOX AND INSTALL3.0/2.0

PHONE FOR LATEST LOW LOW PRICES

20, 40, 63, 80, 85,128,137 & 210 Meg In Stock Now !!!

☆☆☆ INSTALLATION ☆☆☆

New Horizon will collect your Amiga, fit the drive of your choice and deliver it back to you within 48 hours. Full 12 month RTB Warranty on your Computer when we install the drive. Wang UK carry out our repairs. Phone our Sales Hotline for further details.

☆☆☆ SPECIAL OFFER ☆☆☆

MONITORS



MODEL	SIZE	DOT	RES	SOUND	SCAN	PRICE
Philips 8833 Mk II	14"	.31	LOW	YES	15KHZ	POA
Commodore 1084 ST	14"	.31	LOW	YES	15KHZ	POA
Commodore 1960	14"	.31	MED	NO	MULTI	POA
Commodore 1940	14"	.39	MED	YES	DUAL	POA
Commodore 1942	14"	.28	MED	YES	DUAL	POA
Microvitec Cubscan	14"	.31	MED	NO	MULTI	POA
New Horizon Vanilla	15"	.28	HIGH	NO	MULTI	POA
New Horizon Vanilla	17"	.31	HIGH	NO	MULTI	POA

A1200 BLIZZARD

32 BIT TRAPDOOR MEMORY AND FPU ACCELERATORS

Includes Real Time Clock and Zero Wait State Memory

MODEL	CONFIGURATION	PRICE
A1200/4	4 MEG 32 BIT FAST MEMORY	£ 179.00
A1200/4A	4 MEG PLUS 14 MHZ 68881	£ 228.00
A1200/4B	4 MEG PLUS 20 MHZ 68882	£ 258.00
A1200/4C	4 MEG PLUS 33 MHZ 68882	£ 278.00
ADD4	ADDITIONAL 4 MEG MEMORY	£ 159.00

HOW TO ORDER

1. By Phone. Next Day Delivery on small items please add £5.00. Next Day Delivery on Computers, Monitors and Printers add £12.00.

2. By Post. Send a cheque or Postal Order made payable to New Horizon Computers and post with your Order to

New Horizon Computers (Mail Order)
High Hope, Lea,
Ross on Wye, Herefordshire, HR9 7LN

CREDIT CARDS WELCOME

VISA

SALES HOTLINE 0989 750260 TECH SUPPORT 0989 750337

COMPUTER CENTRE ΦFIRST COMPUTER CENTRE ΦFIRST COMPUTER CENTRE ΦFIRST COMPUTER CENTRE ΦFIRST COMPUTER

FIRST COMPUTER CENTRE (LEEDS) Tel: 0532 319444

VOTED BEST DEALER CU AMIGA JAN 93

FIRST COMPUTER CENTRE

OPEN 7 DAYS A WEEK

OPEN MON - SAT..................9.30AM-5.30PM
SUNDAY OPENING...........11.00AM-3.00PM
THURSDAY NIGHT LATE...9.30AM-7.30PM

PREFERRED DEALERS FOR
ACORN, CITIZEN, COMMODORE, DIGITA, PACE, PRIMA, SEGA, STAR ROMBO, SUPRA, US ROBOTICS

HOW TO ORDER

Order by telephone quoting your credit card number. If paying by cheque please make payable to the:

"FIRST COMPUTER CENTRE."

In any correspondence please quote a phone number & post code. Allow 5 working days for cheque clearance

- *interest credit available!*

Please phone for details

- All prices include VAT
- All hardware/computers are UK spec.

UK MAINLAND DELIVERY TARIFFS

- Standard Delivery.........£1.00
- Guaranteed 2 to 3 day (week days) Delivery......£2.50
- Guaranteed Next Day (week days) Delivery......£4.90
- Open seven days a week
- 1200 sq. ft. showroom
- Free large car park
- Overseas orders welcome
- Educational orders welcome

FULL REPAIR SERVICE

We offer a FREE quotation on your computer or any peripheral (monitors, printers etc.). A delivery charge of just £5.00 is charged or alternatively you can visit our showroom.

SALES & TECHNICAL

24 HOUR MAIL ORDER SERVICE 6 LINES!

0532 319444

FAX: 0532 319191

FOR DESPATCH & RETURNS ENQUIRES TEL. 0532 637988

SHOWROOM ADDRESS:

DEPT. AS, UNIT 3, ARMLEY PARK COURT, OFF CECIL ST, STANNINGLEY ROAD, LEEDS, LS12 2AE.

(Follow A647 signs from Leeds City Centre)

It is recommended that prices are confirmed before ordering goods E&OE.

AMERICAN EXPRESS SWITCH Access VISA MasterCard

2% surcharge on AMEX

AMIGA 1200 £284.99!!!

now with **SLEEPWALKER GAME**

32 bit technology based on the 68020 chip running at 14.2 Mhz, AGA custom chipset. The 1200 represents the future of the Amiga. Buy it!! Comes with WB3.

The New Amiga 4000/030

Based on the 68030 processor. Complete with hard drive & 2Mb of chip RAM & WB3

only £899.99 for 80Mb version
or £959.99 for 120Mb version

Amiga 4000/040 from £1939.99
with 6 Mb RAM and 120 Mb hard drive

Cartoon Classics Pack...........£194.99
with Lemmings, Captain Planet, The Simpsons & D-Paint 3

AMIGA 500 Deluxe only £239.99
with built in ROM sharer 2.04/1.3

***AMIGA* 600 Basepack now with X OUT game** (LIMITED OFFER)
only £194.99!

***AMIGA* 600 20HD The Epic pack** 20 Mb Hard drive, Epic, Rome, Myth, & Trivial Pursuit, Dictionary, Language Lab & D. Paint 3
only £289.99 (Inc On Site Maintenance)

The A600 Wild, Weird & Wicked
inc Micro Prose Grand Prix, Deluxe Paint 3, Putty & Pushover
Plus "X OUT" shoot em up
only £219.99

A600 DELUXE ....ONLY £245.99
A600 20HD DELUXE....ONLY £339.99

inc. ROM sharer with 1.3 & 2.04 ROM's making incompatibility a thing of the past. The A600 HD Deluxe comes with a Built in 20 Mb hard drive

Just add 32.99 for a 2 Mb 600 Deluxe!!

PRIMA A1200 REAL TIME CLOCK

at last now you can date and time stamp your files Fits directly onto the motherboard with no soldering.

now only £14.99!

check for compatibility

A600 & 1200's with built in Hard Drive plus HD kits for A600/1200's

Add £14.99 for Real Time Clock!

	HD KIT	A600	A1200
20Mb	*£89.99	£289.99	£394.99
60Mb	*£179.99	£379.99	£484.99
80Mb	*£195.99	£399.99	£499.99
127Mb	*£269.99	£469.99	£569.99
210Mb	*£369.99	£574.99	£674.99

*Just Add £10.00 for fitting

All Amiga's come with Workbench, mouse & 12 month warranty. The A600's, A1200 & A4000 come with 12 months on site warranty All 1200/600's also come with a built in integral hard disk option.

THE AMAZING ZOOL PACK!

- ZOOL (97% Amiga Computing, Nov 92)
- STRIKER (94% CU Amiga, June 92),
- PINBALL DREAMS (94% AUI, Sept 92)
- TRANSWRITE word processor

only £29.99
only £19.99 with any AMIGA!

NEW! AMIGA CD32 PACK

based on the 68020 processor, the CD32 features AA chip set, A4 size footprint, 2Mb RAM, 128K flash memory, built in WB & the ability to play normal audio CD's

only £289.99

CD Rom Amiga A570

Turns your Amiga 500 into a CDTV. Includes Fred Fish CDPD disk & Sim City

now only £147.99!

PRINTERS

All our printers are UK spec.

Canon FUJITSU CITIZEN COMPUTER PRINTERS HEWLETT PACKARD THE star COMPUTER PRINTERS

All our printers come with ribbon/toner, printer drivers (if available), paper & cables!!

CANON

NEW! Canon BJ10sx.......£224.99
Laser quality output. Larger buffer than the
NEW! Canon BJ200......£319.99
3 page a min speed, 360 dpi, small footprint & 80 page sheetfeeder
NEW! Canon BJ230......£379.99
wide carriage version of above
Canon BJ300...........£419.99
Desktop bubble jet with laser quality
Canon BJ330..........£464.99
Wide carriage version of the BJ300
BJ10 Autosheetfeeder...£52.99
Canon BJ10 cartridge...................£18.99

CITIZEN *NEW LOW PRICES!*

Citizen printers have a 2 year guarantee
Citizen Swift 90 Colour....... £169.99
Excellent value 9 pin colour. Highly recommended
Swift 200 Colour............£219.99
Same out put as the 240 but with less facilities
Swift 240 Colour...................£269.99
24 pin, 240cps draft, 10 fonts, quiet mode, 240cps.
Swift Auto Sheet feeder..£79.99

FUJITSU

12 month onsite included except DL-1150 (12 month B T Base)
Fujitsu DL-1150 Colour.£274.99
24 pin, 10 fonts, 200 CPS
Fujitsu Breeze 100........£219.99
ink jet, draft & LQ mode, BJ10EX beater
Fujitsu Breeze 200 inkjet.....£309.99

HEWLETT PACKARD

HP Deskjet Portable..only £369.99
New! HP510 mono.now £264.99
HP 500 Colour........now £319.99
HP 550 Colour........now £519.99
4 times faster than the HP500C!!
HP500 mono cartridges...............£14.99
Double life 500 cartridges............£24.99
All HP printers come with a 3 year warranty

STAR

StarLC20.......................£132.99
180 cps draft, 45 cps NLQ, quiet mode and multi fonts, push button operation.
Star LC100 colour.........£155.99
9 pin colour, 8 fonts, 180 cps draft, 45 cps NLQ
Star LC200 colour.........£195.99
9 pin colour, 8 fonts, 225 cps draft, 45 cps NLQ, A4 landscape printing.
NEW! Star LC24-20 MKII.....£224.99
24 pin quality, 210 cps draft, 67 cps LQ, 39K buffer expandible to 48K, 10 fonts and quiet mode.
Star LC24-200 colour.£264.99
Colour version with 30K buffer expandable to 62K
Star SJ48 Bubble jet.....£217.99
Laser quality, ultra quiet, Epson compatible & portable
NEW! Star SJ144 Colour Thermal
Stunning affordable colour printer. 3 PPM, low running costs
only £534.99

Star SJ48 Autosheet feeder...........................£49.99
Star SJ48 cartridge..£18.99
Star SJ144 cartridge (pack of 3)......................£42.99
Star SJ48/BJ10 Refill kit..................................£11.99

Laser Printers

on-site warranty standard
Fujitsu VM600 Laser......£679.99
6 pages per minute, HP emulation, multi font, 300Dpi
HP Laserjet 4L.............£609.99
1Mb RAM, 4 ppm, small footprint
OKI 400e.....................£514.99
4 page laser, mult font, 512k memory, HP emulation
Ricoh PCL5.....................£809.99
400 Dpi, 2Mb RAM, 5Page per minute
add just £114.99 for 2 Mb of extra RAM
Star Laserjet LS5..........£564.99
5 page laser, HP emulation, multi font, 300Dpi

MONITORS

All our monitors are UK spec. All monitors come complete with a free Amiga lead

PHILIPS CM8833 MK2 Colour
Colour stereo monitor. 600*285 line resolution, green screen facility, one years on site maintenance.
with Lotus Turbo Esprit!
now only £194.99 UK Spec.

PHILIPS TV Tuner for the 8833.£64.99

Commodore 1084ST Colour
features built in tilt & swivel stand this new colour monitor from Commodore is outstanding value
only £199.99

MITAC SVGA .28 dp Colour monitor with *overscan*
only £249.99

NEW! COMMODORE 1940
Dualsync, .39 dpi only £284.99
NEW! COMMODORE 1942
Dualsync, .28 dpi only £379.99
COMMODORE 1960
multisync .28 dpi only £379.99

MICROVITEC MULTISYNCS
A 3 year warranty comes as standard
14"...................................£409.99
20"...................................£1099.99

Goldstar TV/Monitor..only £169.99

TILT & SWIVEL STANDS...........................£11.99
14" MONITOR COVERS...............................£5.99

SUPRA MODEMS

The Supra-Fax Modem V.32 bis (14400 baud !!!)

Allows you to send and receive fax messages. This new modem from Supra has full 14400 baud capability. Spec includes V.32bis, V.32, V.22bis, V22, V21, MNP2-5, V.42, V42bis, Class 1 & 2 commands, 9600/14400 Group 3 Fax. Includes free comms software & modem cable

only £249.99
including heavy duty PSU

Supra Fax Plus

With the ability to send faxes! Even faster than the standard 2400 from Supra with auto dial & auto receive. Hayes comp. V22b, V42 Bis, MNP 2-5 & auto adjust to maximise transmission speeds. Includes free modem cable & comms s/w!!

only £119.99

GP FAX SOFTWARE only £39.99 if bought with modem

Supra 2400

Get on line using this great value fast modem with auto dial & receive. 2400 baud Hayes comp, V22 BIS. Inc modem cable & comms s/w!!

only £74.99

All Supra Modems come with a 5 year warranty!! Supra modems have not been tested by BT but they have been given between 80 and 90% ratings by the press.

US ROBOTICS

PREFERRED DEALERS

Courier V32bis+FAX......£386.99
Courier HST (16.8).........£403.99
Courier HST/Dual 16.8 Fax..£503.99
Sportster 14400 FAX......£279.99
WorldPort 14.4+FAX.....£289.99

If you thought V32bis was fast try this one! They come with a 5 year warranty *and are FULLY BABT Approved!*

PACE MODEMS

MicroLin V22b FAX £216.99
MicroLin V32b FAX £449.99
5 year warranty *and FULLY BABT Approved!!*

OPEN SUNDAY 10-3PM
MON 8-7, TUE-FRI 8-6
SAT 8-4.

TRILOGIC

Est 1984



SALES: 0274 691115

CALLERS WELCOME

We also sell PCs from £499 + vat. PC cards, motherboards VGA cards hard & floppy drives, cases etc

OFFICIAL ORDERS FROM GOVERNMENT & EDUCATIONAL ESTABLISHMENTS WELCOME.

ALL PRICES INCLUDE VAT

UNIT 1,
253 NEW WORKS RD,
BRADFORD, UK,
BD12 0QP Est 1984
FAX 0274 600150

SALES
0274 69 11 15
OPEN EVERY DAY

ACCESS VISA
SWITCH DELTA
CONNECT AMEX*

FAST PROFESSIONAL MAILORDER SERVICE.
SAMEDAY DESPATCH^

1) Order by phone using your credit, charge, or debit card.
2) Order by Mail - sending cheque bankers draft or postal orders payable to TRILOGIC.
3) Please add part postage & packing of £1.00 to small orders under £100 or £2.00 to small orders over £100. Large/heavy or fragile items sent by overnight carrier only +£5.50. Overnight carrier - any order +£5.50 Uk Mainland only. Scottish Highlands £7.50; N.IRELAND. +£10.00; EIRE +£20
UK Saturday delivery - add £12.00 (Not available to Scottish Highlands Goods remain our property until paid for in full.

*AMEX SUBJECT TO 2% SURCHARGE
^Subject to goods being in stock.

AMIGA 600/1200 2.5" IDE HARD DRIVES

40MEG only	£129.99
60MEG only	POA
80MEG only	£199.99
120MEG only	£299.99
210MEG only	£399.99

PRICE INCLUDES:
* READY FORMATTED & PARTITIONED DRIVE;
* IDE DRIVE CABLE;
* ILLUSTRATED FITTING INSTRUCTIONS;
* FIXING SCREWS;
* HD PREP DISK;
* RECOVERY HINTS.

2.5"IDE CABLE £9.99
3.5" TO 2.5" CABLE £19.99

FITTED FREE while U wait if you take out one of our low cost Extended Warranties. Otherwise £15.00 fitting charge.

FIT A HARD DRIVE YOURSELF - IT'S EASY AND WITH OUR 2 OR 3 YEAR WARRANTY PLANS, YOU'RE COVERED FOR BOTH BREAKDOWNS & ACCIDENTS.

OPTIONAL WARRANTIES
* COMPUTER & DRIVE BOTH COVERED
* COVERED EVEN IF DRIVE FITTED BY PURCHASER.
* COVERED EVEN IF COMPUTER NOT PURCHASED FROM US
* UNDERWRITTEN BY A LEADING UK INSURANCE Co.
* ACCIDENTS COVERED
* BREAKDOWNS COVERED
* VERY FEW EXCLUSIONS
* LOW COST

COMPUTERS UPTO £600 - £27.99 for 2yrs or £42.99 for 3yrs.
COMPUTERS UPTO £999 - £32.99 for 2yrs or £67.99 for 3yrs.
FULL DETAILS ON REQUEST

LOWER PRICES AMIGA 1200s WITH HARD DRIVE FITTED

A1200+40MEG HD	£439.99
A1200+80MEG HD	£509.99
A1200+120MEG HD	£599.99
A1200+210MEG HD	£699.99

ADD JUST £410 FOR CUBSCAN MONITOR

ANY A1200 COMPLETE WITH BATTERY BACKED CLOCK - ADD £20.00

PRICES INCLUDE 2YR EXTENDED WARRANTY

AMIGA 1200 SUMMER PACK
Inc TROLLS & NIGEL MANSELL GP
£289.99
(1YR WARRANTY)

MORE AMIGAS

AMIGA 4000 RANGE 030/040 80/120 /250MEG	POA
VORTEX 386 GOLDEN GATE PC CARD for A4000	£369.99
VORTEX 486 PC CARD with any 4000 SAVE £50	£649.99
AMIGA CD32 DUE IN SOON	£289.99
AMIGA 500+ CARTOON CLASSICS FEW ONLY AT	£194.99

A1200 UPGRADES

GVP A1230 TURBO MEMORY BOARDS

Includes 68030 running at 40MHz; 68882 socket for FPU. Has two 32bit simms skts.

With no fpu & 0meg	£244.99
WITH 4MEG & 68882	£479.99
WITH SCSI I/FACE	POA

AMIGA 1200 32BIT 4MEG CARD + CLOCK £1??.99

A1200 INTERNAL CLOCK MODULE £22.99 BATTERY BACKED.

EXTERNAL DISK DRIVES

A1200 EXTERNAL 3.5" DRIVE INTERFACE & HOUSING - POA

CUMANA CAX 354 £64.99

ROCLITE RF382AV £64.99

BOTH DRIVES ARE FULLY COMPATIBLE WITH ALL AMIGAS & HAVE ON/OFF SWITCH & THRU PORT

AMIGA 500 HARD DRIVES & UPGRADES

GVP HD8 FOR A500 & 500+ - NO DRIVE	£184.99
GVP SERIES II HD8+ 42 Meg for A500 - PRICE DOWN -	£244.99
GVP SERIES II HD8+ 80 Meg for A500 - PRICE DOWN -	£345.99
GVP SERIES II HD8+ 120meg for A500 - PRICE DOWN -	£389.99
GVP SERIES II HD8+ 210meg for A500 - now only	£575.99
GVP SERIES II HC8 for A1500/2000 - NO DRIVE	£119.99
GVP SERIES II HC8 + 42meg for A1500/2000	£285.99
GVP SERIES II HC8 + 80meg for A1500/2000	£334.99
GVP SERIES II HC8 + 120meg for A1500/2000	£409.99
GVP SERIES II HC8 + 210meg for A1500/2000	£559.99
GVP A530 COMBOS with 42Mb drive	£475.99
GVP A530 COMBOS with 80Mb drive	£575.99
GVP A530 COMBOS with 120Mb drive	£677.99
1MEG *9 SIMMS FOR GVP DRIVES	
1MEG 32 BIT SIMM	
4MEG x8 SIMMS FOR GVP DRIVES	
4MEG 32BIT SIMMS FOR A530	

Please note, due to a shortage of memory chips & simms, prices are rising daily - please phone before ordering.

A590 & GVP SCSI DRIVE UPGRADES.
42MEG £139.99
Easy to fit

WORKBENCH 3 UPGRADE KIT DUE SOON

A500 / 500+ 1/2meg upgrade without clock	£POA
A500 / 500+ 1/2meg with clock & battery	£POA
A500+ 1MEG UPGRADE	£POA
AMIGA 600 1meg upgrade + clock - now only	£POA

VORTEX AT ONCE PLUS 286 PC EMULATOR FOR A500	£99.99
GVP PC286 PC EMULATOR CARD FOR SERIES II HARD DRIVES	£99.99
GOLDEN GATE 386SX PC CARD FOR A1500/2000	£369.99
GOLDEN GATE 486SX PC CARD FOR A1500/2000	£699.99
OPTIONAL DRIVE CONTROLLER CHIP FOR GOLDEN GATE	£34.99
IIT 80387SX25 CO-PROCESSOR FOR GOLDEN GATE	£69.99
G-FORCE 030/25MHz FOR A1500/2000 others available	£459.99

SALES
0274
691115
5 LINES

PRINTERS

CITIZEN SWIFT 90 COLOUR £179.99

FREE AMIGA DRIVER DISK WITH ALL CITIZEN PRINTERS

CITIZEN SWIFT 240 COLOUR £284.99

CITIZEN PROJET INKJET £399.99

CITIZEN SWIFT 200 £209.99 COLOUR MODEL £244.99

HP DESKJET 550 COLOUR £679.99

HP DESKJET 510 £339.99

RICOH LP1200 LASER PRINTER £799.99

SEIKOSHA OP 104 LASER PRINTER £559.99

PRINTER ACCESSORIES

AMIGA PRINTER CABLE 1.8m	£9.99;
3m £12.99; 5m £14.99; 10m	£19.99
M-M or M-F EXTNSION CABLE 2m	£10.99
PRINTER STANDS £7.99; &	£12.99
RIBBON REINKING SPRAY	£11.99
120D/9/90/200/240 BLK RIBBON	£4.99
9/90/200/240 COLOUR RIBBONS	£15.99
PROJET INK CARTRIDGE	£13.99
LABELS, 1000x1.5"X3.5"	£7.99
PAPER 60GRM 2000 SHEETS	£21.99
2WAY PRINTER SHARER	£29.99
3WAY PRINTER SHARER	£33.99
4WAY PRINTER SHARER	£34.99

For sharing one printer with several computers Fitted with 36way sockets-Prices include 2m 36way Printer to switch cable.

MONITORS

PHILIPS	COMMODORE
CM8833mk2	1084S
£229.99	£199.99

CUBSCAN 14" MULTISYNC COLOUR MONITOR
£439.99

20" CUBSCAN £999.99

NEW 17" MODEL POA

COMMODORE 1942
14" STEREO MONITOR
£389.99

1901 MONITOR CONVERSIONS £69.99

We can convert your 1901 monitor to work on thge Amiga. Lead included. Please phone for details.

VIDEO DEPT

GVP GENLOCK	£294.99
ROCGEN GENLOCK	£99.99
ROCGEN PLUS	£139.99
ROC KEY	£269.99

EPSON COLOUR SCANNERS
GT6000,65000,80000 POA

VIDI 12	£ 84.99
VIDI 12s&v	£164.99
SUPERPIC	£499.99
COLOURPIC	£399.99
RENDALE 8802s	£493.99
RENDALE 8802FMC	£179.99
RENDALE 8802	£134.99
GVP IV 24 from	£989.99

COMPUTER MUSIC DEPT

STEREO SAMPLER BARGAINS:
SOUNDMASTER ~~£99~~ NOW £49.99
INC AUDIOMASTER 4

'MIRACLE' KEYBOARD ONLY £249.99
2 FREE SONG BOOKS
PC VERSION AVAILABLE

PRO MIDI INTERFACE ONLY £27.99
UNIQUE 5 PORT DESIGN
Midi leads 1.2m - £1.99 3m - £2.99

SUPERFI 2 STEREO SYSTEM HI FI QUALITY only £54.99
20WATTS PER CHANNEL BASS, TREBLE & VOLUME CONTROLS

BACKUP UTILITIES

X COPY PRO NEW £34.99
Latest version - complete with NEW Mk 2 Automatic Cyclone external drive adaptor. Highly successful.

Mk1 CYCLONE ADAPTOR £12.99

NB. Making backups without the permission of the copyright holder is illegal.

EDUCATIONAL

ADI ENGLISH; MATHS; FRENCH	£18.99
ADI JUNIOR RANGE	£14.99
BETTER MATHS (12-16)	£17.99
BETTER SPELLING (8+)	£17.99
DATAWORD	£14.99
DISTANT SUNS V4.1	£52.99
FUN SCHOOL4 RANGE	£17.99
FUN SCHOOL SPECIALS	£18.99
FRENCH MISTRESS	£15.99
GERMAN MASTER	£15.99
ITALIAN TUTOR	£15.99
JUNIOR TYPIST (5-12)	£17.99
KIDS ACADEMY RANGE - ALL	£14.99
LINKWORD ANGUAGES	£21.99
MICRO RANGE ALL	£18.99
MEGA MATHS	£18.99
NODDY'S PLAYTIME	£18.99
PLAYDAYS	£18.99
READING WRITING COURSE	£18.99
SPANISH TUTOR	£15.99
VOYAGER 1.1	£54.99

BOOKS & VIDEOS

BRUCE SMITH BOOKS

MASTERING AMIGA AREXX	£21.95
MASTERING AMIGA DOS 2 VOL 1	£21.95
MASTERING AMIGA DOS 2 VOL 2	£19.95
MASTERING WORKBENCH 2	£19.95
MASTERING AMIGA C	£19.95
MASTERING AMIGA PRINTERS	£19.95
MASTERING AMIGA ASSEMBLER	£24.95
MASTERING AMIGA SYSTEM	£29.95
MASTERING AMIGA AMOS	£19.95
MASTERING AMIGA - BEGINNERS	£19.95
A600 INSIDER GUIDE	£14.95
A1200 INSIDER GUIDE	£14.95

VIDEOS

DELUXE PAINT 4 VIDEO	£14.99
ADVANCED DELUXE PAINT 4	£14.99

MISC ITEMS

SUPRA FAX MODEM
Upto 14400baud £349.99

A500 ROM SWITCH ONLY £27.99
Keyboard controlled Rom Switch for A500 / 500+ &1500/2000

ROM SWITCH & 1.3 ROM only	£57.99
ROM SWITCH & 2.04 ROM	£64.99

AMIGA PRINTER PORT EXPANDERS

For connecting upto 3 devices to your computers PRINTER PORT. Switch to computer lead incuded:- State 'LONG' for printers; or Short for Digitiser, scanner & samplers.

2way - £27.99 inc cable
3way - £30.99 inc cable
4way - £33.99 inc cable

SEAL N TYPE KEYBOARD SKINS £12.99

KEEPS OUT DUST & LIQUIDS.
Fit snugly over your keyboard - moulded to fit over each key, but flexible enough to type through unhindered. Available for all AMIGAs - please state which.

STANDARD DUST COVERS

SOFT ANTISTATIC, SEMI TRANSPARENT

AMIGA 500/600/1200	£4.99
AMIGA 3000/4000 KEYBOARD	£3.99
SWIFT 90/200/240	£6.99
1084/8833 MONITOR	£6.99
CUBSCAN/196/1940 MONITOR	£7.99

TWO WAY SCART SWITCH £19.99

For connecting two scart leads to your TV or video

OTHER MONITOR SWITCHES

4WAY SCART SWITCH	£39.99
VGA MONITOR SWITCHES. (Fitted with 15way HD SOCKETS)	
2way	£34.99
4waY	£49.99

MONITOR LEADS

Large range available - please enquire.

AL1 - MOST TVs WITH SCART SOCKET TO ALL AMIGAS inc audio lead	13.99
AL7P CM8833/1084S MONITOR TO ALL AMIGAS inc sound lead	£14.99
AL11 9PIN MALE MULTISYNCS LEAD TO ALL AMIGAS	£12.99
AL12 15PIN FEMALE 3ROW Many multisync monitors	£14.99
AL13 15PIN MALE 3ROW Many multisync monitors	£14.99
PRODUCTIVITY LEAD FOR MULTISYNC MONITORS	£19.99
MODULATOR EXTENSION LEAD - Reduces modulator overhang	£10.99
MONITOR SWIVEL	£11.99
MONITOR SWIVEL - HEAVY DUTY	£14.99

MONITOR LEADS MADE TO ORDER - PLEASE PHONE FOR PRICE

AMIGA SOFTWARE

ADVANTAGE	£59.99
AMOS	£34.99
AMOS - EASY	£25.99
AMOS 3D	£23.99
AMOS COMPILER	£21.99
AMOS PROFESSIONAL - DOWN TO	£39.99
AMOS PRO COMPILER	£25.99
ART DEPT PRO AGA	£169.99
BARS AND PIPES PRO V2	£269.99
CAN DO V2 NEW VERSION	£94.99
CROSS DOS V5	£39.99
DELUXE PAINT 4AGA	£74.99
DELUXE MUSIC 2	£54.99
DELUXE VIDEO 3	£74.99
DEVPAC 3	£51.99
DIRECTORY OPUS V4 ONLY	£49.99
ESSENCE	£56.99
EXCELLENCE 2 REDUCED	£57.99
FINAL COPY 2 r2 NEW VERSION	£74.99
GOLD DISK OFFICE 2	£61.99
HYPERCACHE	£37.99
HISOFT BASIC	£49.99
HOME ACCOUNTS 2	£41.99
IMAGINE 2 REDUCED	£164.99
IMAGEMASTER -	£129.99
KINDWORDS 3	£36.99
LATTICE/SAS C V6	£293.99
MINI OFFICE BARGAIN	£42.99
MORPH PLUS £13 OFF	£142.99
ORGANISE	£46.99
PAGESTTER 3	£47.99
PAGESTEAM 3	£POA
PENPAL STILL ONLY	£35.99
PERSONAL PAINT	£57.99
PRODATA	£POA
PROFESSIONAL CALC	£POA
PROFESSIONALPAGE 4	£179.99
QUARTERBACK 5	£41.99
QUARTERBACK TOOLS DELUXE	£114.99
REAL 3D PROFESSIONAL	£399.99
SCALA	£77.99
SCALA PROFESSIONAL	£204.99
SCENERY ANIMATOR	£67.99
SOUNDMASTER - A GIFT AT	£49.99
STEREOMASTER SAMPLER	£29.99
SUPERJAM GIVEAWAY PRICE	£39.99
SUPERJAM 1.1	£89.99
SUPERBASE 4 budget version	£126.99
SUPERBASE 4 - FULL VERSION	£244.99
TECHNOSOUND TURBO 2	£41.99
TERRAFORM	£34.99
THE PATCHMEISTER	£67.99
THE PUBLISHER	£37.99
TURBOPRINT PRO V2	£37.99
TURBOTEXT	£
VIDEO DIRECTOR	£POA
VISIONARY	£37.99
VISTA PRO 3	£57.99
WORDWORTH 2 aga	£82.99
XCAD 2000	£99.99

SPECIAL OFFERS- LIMITED STOCKS

GFA BASIC	£9.99
SUPERJAM	£39.99
SOUNDMASTER SAMPLER	£49.99
SYNTHIA PRO	£99.99

TOP AMIGA GAMES

See Amiga Format for Full list.

A320 AIRBUS	£26.99
AIRBUS A320 N.AMERICA	£27.99
A TRAIN NEW	£26.99
ANCIENT ART OF WARS IN SKIES	£26.99
ABANDONED PLACES 2	£26.99
BLADE OF DESTINY	£30.99
BIRDS OF PREY	£27.99
B17 FLYING FORTRESS	£26.99
CAMPAIGN	£27.99
CIVILISATION	£26.99
COMBAT AIR PATROL NEW	£22.99
D DAY	£23.99
DESERT STRIKE NEW	£23.99
DUNE 2	£23.99
EPIC	£20.99
EYE OF BEHOLDER 2	£27.99
FLASHBACK	£23.99
FLIGHT COMMAND	£20.99
FLIGHT SIMULATOR 2	£29.99
FLT SIM 2 SCENERY DISK. EACH	£15.99
FLT SIM BRIT SCEN COLLCTN	£36.99
GRAHAM GOOCHS WORLD CRICKET	£23.99
GOAL	£23.99
GUNSHIP 2000	£26.99
INDIANA JONES -ADVENTURE	£29.99
INTERNATL OPEN GOLF (A1200)	£20.99
MONKEY ISLAND 2	£29.99
MORPH	£20.99
NICK FALDO'S CHAMPSHP GOLF	£26.99
NIGEL MANSELLS WORLD CHAMP	£23.99
PAPERBOY 2	£20.99
PGA TOUR GOLF +	£23.99
PREMIERE MANAGER	£20.99
REACH FOR THE SKIES	£23.99
SENSIBLE SOCCER 92/93	£18.99
SIM ANT	£25.99
SIM EARTH	£25.99
SIM LIFE	£26.99
SYNDICATE	£27.99
SWORD OF HONOUR	£18.99
WALKER	£23.99
WAR IN THE GULF	£23.99
WING COMMANDER	£26.99
WORLD SERIES CRICKET	£23.99

SPARES

TV MODULATOR (exchange)	£19.99
TV MODULATOR no exchange	£29.99
FATTER AGNUS 8372A	£39.99
KICKSTART 1.3 ROM	£31.99
KICKSTART 2.04 ROM	£39.99
SUPER DENISE	£39.99
GARY	£39.99
8520A I/O CHIP	£15.99
A500+ MOTHERBOARD complete	£99.99
A500 MOTHERBOARD- no socketed chips or ram chips	£29.99
CBM MOUSE	£14.99
A500 CASE	£19.99
A500 KEYBOARD	£59.99
AMIGA INTERNAL DRIVE	£59.99
MAINS SUPPRESSOR BLOCK 4WAY	£12.99
UPRATED A500 POWER PACK	£44.99
CBM A500 PSU	£37.99
GVP HD8 PSU	£69.95
EXTERNAL DISK DRIVE PSU	£29.99

SERVICES

AMIGA REPAIR SERVICE
PC REPAIR SERVICE
PC UPGRADE SERVICE

COLOUR PRINTING (300 DPI) A4 SIZE
FULL COLOUR PHOTOCOPYING
upto A3 from only 20p per copy.
COLOUR PRINTING ON TEE SHIRTS POA

PRICES WERE CORRECT AS OF 13-08-93, but as our crystal ball is broken, some may have changed by the time you read this, due to currency fluctuations & manufacturers/ suppliers price increases. We do make mistakes from time to time too ! All registered Trademarks are acknowledged. Callers are most welcome but please phone first to check availability & avoid disappointment - we try to keep most items in stock unlike some of our competitors and will gladly put items aside for you to collect, but shortages of some items do occur from time to time. E&OE. Please phone if in doubt.

continued from page 40

memory, and that memory will have to be in a "contiguous" chunk – all in one big area of adjoining bytes of memory, in other words.

The formula to calculate how much memory a black and white scan will require is quite straightforward: (Width in Inches * Scan Resolution) * (Height in Inches * Scan Resolution) divided by 8, equals the number of bytes required. (The asterisk symbol * means "multiplied by".)

For example, let's say you are scanning something that is 4 inches wide and 6 inches high, at a scan resolution of 400 dots per inch. So (4*400) * (6*400) / 8, which is 1,600 * 2,400 / 8, which is 3,840,000 / 8, which equals 480,000 bytes of memory – almost half a megabyte!

Remember this is memory that has to be available, in a single contiguous chunk, after Workbench has booted and after the scanning programming itself has been loaded.

As your system stands at the moment you have two types of memory in your Amiga – Chip (graphics) memory and Fast (expansion) memory, 512K of each, which is cutting it really fine for scanning purposes. With such a set-up you'll be restricted to scan areas (at 400 dpi) of about 4in by 4in or less, and you'll have to keep re-booting the computer after each scan to defragment memory.

So before even considering buying a hand scanner, you need to get yourself some more memory. How much memory? Well, as much as you can afford, but at least another 1Mb, giving you a total of 2Mb – 512K Chip, 1.5Mb Fast. Personally I'd recommend you bought a memory expansion that fits into the bus on the left-hand side of the 500, into which you can place memory chips. This way you can buy and easily fit more memory as and when you can afford it. But make sure you get one with a throughport in case in the future you need to plug anything else into the expansion bus at the same time as the memory expansion.

Of the greyscale hand scanners available, quality-wise there's not much to choose between the DaataScan Professional, the AlfaScan Plus and the Power Scanner. DaataScan comes with the simplest software, and is therefore the easiest for beginners to get to grips with; AlfaScan comes with the most powerful software and may scare the life out of nervous beginners because it has more features than you can shake a stick at; Power Scanner is a happy medium between the two.

The cheapest colour hand scanner currently available is the 12-bit PowerScan Colour (£239, Power Computing ☎ 0234 843388). Keep in mind that colour data requires much more memory than black and white data – for colour scanning 3Mb of contiguous memory is probably the bare minimum to be able to scan anything that is going to be of any use. And if you are going to save and use the 12-bit data, rather than a lower quality HAM or 32-colour image, you will almost certainly require a hard drive – file sizes tend to be massive. ***JW***

OFFENSIVE INSTALLATION

I recently upgraded from an A500 to an A1200 and thought it was about time I had a hard drive. I fitted a 40Mb IDE drive, which came ready partitioned and formatted, and proceeded to copy the relevant bits and pieces from the Workbench disks to the system partition, customising the keyboard and inserting the full Workbench startup-sequence from the original disk.

Everything seemed to work fine, but the first problem occurred when I tried to install *Wordworth 2.* The hard drive install program on the Printerfonts disk worked fine, but when I try to open *Ww* the system throws a "SOFTWARE FAILURE #80000004" in my face. I used *Wordworth 2* from floppies before I got the drive, so I know it should work, and I still have 1.7Mb of RAM, so that's not the problem.

I have noticed that quite a bit of my so-called hard-drive-installable software gives this "Unable to open your tool" message, but everything works fine when installed from the RAM drive. What am I doing wrong? This has made using my hard drive not a dream, but a real pain.

J Burns
Sunderland
Tyne & Wear

It's difficult to tell exactly where your problem lies, but there are a couple of possibilities. You say the drive was supplied formatted. This means it should have included all of the 3.0 system files, and you should not have needed to copy any files over from your Workbench 3 disk set. It's possible that either the drive was not set up properly in the first place, or you have overwritten or deleted important files. In either case contact the suppliers and see if they can help you restore your system. You will need to use the Commodore 3.0 Install disk to restore your system. If you cannot borrow this disk from a friend, then you will need to contact your suppliers for reinstallation.

It's also highly likely that another package you installed has overwritten important system files. I was horrified recently to discover that the *Vidi Amiga 12* software install script overwrites Workbench 3.0 system files with older release 2.0 files, causing the machine to crash and requiring the reinstallation of Workbench! Such abysmal install scripts are rare (I believe Vidi have now fixed the problem with their software, although they would not send me an update disk to check this out). Beware of software that does not use the official Commodore Installer program. ***JR***

NOT SO HANDY

I have an A500 Plus and a Citizen Swift 24e printer with colour kit. I use that truly remarkable program *Wordworth 2-AGA* and have bought the *Citizen Print Manager*. But how do I use the *Print Manager?* I know that I am supposed to run the *PM* program before I run *Wordworth,* but what does that mean exactly? I have copied *Print Manager* to a new disk and I think that I can safely and correctly choose the preferences I want to use and then save them to that disk. But what then?

To date I have been switching on my Amiga, then switching on the printer, then inserting the *Wordworth* program disk and the *PM* disk. When I get the Workbench screen I double-click on the "PM prefs" icon and run the program. I then run *Wordworth.* Is this correct or should I be saving the *PM* program as a prefs file on the *Wordworth* disk?

Do I have to have the printer switched on first? Can I switch the printer off and then on again without losing the PM prefs?

Earlier versions of *Wordworth* were run by double-clicking on one of any number of Prefs icons that were on the same disk. The new AGA version would appear to have to be run from the "Ww" icon, which then calls up the only prefs icon on the disk. Does this mean that it overwrites the PM prefs I have previously selected?

What I really need is a blow-by-blow account of how to select all the preferences from *Print Manager* to get the best possible output from my Swift 24e, using a Citizen colour ribbon and either eight or preferably 16 colours on-screen with large size Agfa Intellifonts.

I wrote to Citizen but they were not at all helpful. The *Wordworth* publishers, Digita, were much more helpful, but I still do not know the full answers to my queries.

Ron J Handy
Cricklewood
London

You are running *Citizen Print Manager* and *Wordworth* exactly the way they were designed to be run. When you save the *PM* preferences you should save them to the *PM* disk, not the *Wordworth* disk. Next time you run the *PM* program afresh, these settings will automatically be loaded, saving you the bother of setting them all over again.

You do not have to have the printer switched on when setting or saving the *PM* prefs, and it matters not if you switch the printer off – after you've set them once the PM settings will only be lost if you switch the Amiga off.

Sorry, there's no way we could fit in a blow-by-blow rundown on how to operate all the features of *Citizen Print Manager.* I have the program here, and the manual (as supplied by Citizen) describes all the functions more than adequately in plain English and six other languages. On the many occasions I have called the Citizen Response Centre – not as a journalist, but masquerading as an end-user – they have always been nothing less than polite, and on most occasions very kind and helpful.

Writing to any company for help with one of their products is never the best way to go about it. A 15-minute telephone conversation can

JARGON BUSTING

Chip RAM – The area of the Amiga's memory directly accessible by the machine's custom graphics and sound chips. On the first Amigas, this was originally a maximum of 512k. Newer machines fitted with the fatter Agnus graphics chip can access 1Mb, enabling smoother animations and more screens to be displayed at once. The new A600 comes with an Agnus chip capable of addressing 2Mb of Chip RAM.

Fast RAM – Any extra memory which is not Chip RAM. The custom chips cannot access it directly as they can Chip RAM, and because such accesses to Chip RAM can block out the central processor and slow down its own accesses, Fast RAM is faster.

HAM – Hold And Modify is an Amiga graphic mode which enables all 4,096 colours to be displayed at once, with certain restrictions.

take an hour or more to put on to paper, so letters tend to get answered slowly and briefly. To be perfectly frank, answering customers' letters is a rotten job and nobody really wants to do it. They'll talk to you all day on the phone because they can ask you questions about your set-up and give you more accurate advice. Phone the Citizen Response Centre ☎ 0753 584111.

However, at the end of the day, to find out which settings are best for your particular Citizen printer you will have to experiment by selecting different settings and doing lots of printouts. It's called "having fun with your computer".

As for the *Wordworth* **Prefs** icons, these are simply "empty" projects that are saved with certain features selected or unselected. Look, load *Wordworth*, set it up exactly the way you want it, bring up the **Wordworth/Preferences** requester, hit the **More** button, check that there is a tick next to **Save Icons**, then select **Save**. A file requester appears, and in the **Prefs** gadget at the foot of that requester is the default filename **Wordworth-Prefs**. Change that filename to anything you like – **RonsPrefs**, for example – press the [Return] key, and then hit the **Save** button.

Flip to the Workbench. Close the *Wordworth* disk window. Now open it again. If there isn't an icon in there called **RonsPrefs** you have not followed the above instructions properly, so go away and do it again. If there is an icon in there called **RonsPrefs**, you will now be able to double-click on this icon instead of **Ww** to start *Wordworth*, and it will present you with an empty document set up just the way you like it. ***JW***

SHARES AND SHADES

1. Can *Wordworth 2* and *ProPage/ProDraw* (versions 4 and 3) share outline fonts? I have about 5Mb worth, and having to duplicate them takes up a fair slice of hard disk. I have tried to get them to coexist, but there appears to be a difference between the two "if.ss" files which stops the fonts from being shared.
2. In a similar vein, is there any way to convert the Intellifonts that come with *Wordworth* to be used with *ProPage/ProDraw* if they don't have ".lib" files with them?
3. Now that AGA is starting to be well supported, is it likely that people like me with the old chipset will stop receiving support, especially for stuff like *DeluxePaint*, which is heading towards AGA support?
4. I have a *ProDraw 3* object which uses a gradient fill with eight steps from white to 7% grey. But it will only print with three shades, half the object being grey, three-eighths of it a lighter grey, and the remainder white. With a little experimentation it appears that only 16 shades of grey can be printed, although the printer is easily capable of many more. Is this a limitation of *ProDraw* or of the printer driver? I use a Star SJ-48 inkjet with the Star24Plus driver.
Andrew Watson
Currie
Midlothian

1. The system *Wordworth* uses for Compugraphic fonts is quite different from the system *ProPage 4* and *ProDraw 3* use. It's not really a question of one doing it the right way and the other doing it the wrong way; they are merely doing it different ways. Because of this, as you've discovered, Wordworth requires its own version of the **if.ss** and **if.fnt** files, plus three more files called **if.dsc, libinfo.dsc** and **plugin.tyq.**

With an awful lot of fluffing about, manually copying and renaming files before using particular packages, it is possible to have the *Wordworth* and *ProPage/ProDraw* CG fonts all in one directory, but (having just tried it!) I have to say it really is more hassle than it's worth.

A better idea would be to manage your fonts more sensibly. Instead of having every font you own available in every program you own, put them all into one (or more) "font library" directories, and before starting any particular project decide which fonts you want (or might want) to use, copy these into the relevant directory for that program, run the relevant utility that updates the font list for that directory – *AGFAInstall* for *Wordworth, CG_Update* for *ProPage/ProDraw* – then run the application and get on with the job.

How do you know which fonts you want for any particular project? Simple. Create a page in *ProPage* or *Wordworth* that contains all the characters in a single font, make sure you type the name of that font on the page as well, and then print it. Do the same for all your fonts and you'll be able to flick through your "font book" to choose the best fonts for the job in hand.

2. I mentioned above that *Wordworth* requires a few files for Compugraphic font management that *ProPage* and *ProDraw* don't, and the reverse is also true. The **.type** files that come with *Wordworth* are essentially the same things as *ProPage's* and *ProDraw's* **.lib** files, but for *ProPage* you also need **.dat** and **.metric** files. The *ProPage/ProDraw FontManager* program creates these when converting from PostScript Type 1 fonts to Compugraphic, but it isn't able to create them for fonts that are already in the Compugraphic font format. To do this you'll need Soft-Logik's *TypeSmith* program.

3. I'm not sure what you mean by "stop receiving support". If you mean will software manufacturers

CODE CLINIC

TOBY SIMPSON RIDES TO THE RESCUE AND DEBUGS ANOTHER READER'S PROGRAM

Author: **John Hargreaves**
Program: **Text adventure game**
Language: **Assembly language**
Fault Summary: **Appears to cause corruption occasionally and does not work entirely reliably.**

JARGON BUSTING

MMU – Memory Management Unit. This is a hardware feature normally used for systems like UNIX, and gives memory protection and paging facilities, enabling you to make your machine use hard disk space as main memory, for example. The Amiga does not support this "virtual memory" facility, but you can use the MMU's features for debugging and program it to trap illegal memory accesses, which is what a development tool called *Enforcer* does.

This month we're looking at someone's assembly language adventure game. This program is huge, and the author sent me a large chunk of it, saying that "it does not work reliably, and appears to be corrupting memory somehow." The author has an Amiga 3000 and says that he has tested it on his friend's A1200 and the bug happens differently on that machine.

Lecture time first! A program like this, a massive text adventure game, does not need the speed or control given to you by programming in assembly language. This sort of program would be much better written in a language such as C, because not only would it be quicker to write, but it would be much easier to debug and maintain in the future. Just my two cents' worth!

Anyway, on to the program in question. The bug was actually extremely easy to find, and I did it without actually looking at the source code at all until I'd identified the fault itself. I run lots of debugging tools on my development system, and one of these is called *Enforcer. Enforcer* traps illegal memory writes and tells you exactly what happened. The adventure game actually took about two minutes to debug as a result of the "*Enforcer* hit" which the program caused (see boxout). The program is making a byte write to location **0x0000004e**, which is illegal. The value **0x0000004e** just so happens to be contained in **d0** also. A strange coincidence. My immediate guess here was that John was using indexed addressing with an uninitialised pointer somehow, like this:

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

```
move.b        d1,0(a0,d0.w)
```

If **a0** had contained zero, then this instruction would have caused an *Enforcer* hit like the one we actually got. However, debugging by guesswork is time-consuming and particularly stressful if you have more clues to go by – and we do: our *Enforcer* hit. The bottom line of our hit is of key importance to us. We know a few things. First, that we have a byte write to location **4e** of memory. **4e** is sufficiently small to probably be a structure offset. The data the program tried to write was **0xff**, or 255 in decimal. This was probably done by a **move.b #255** or a **st.b.** This narrows the search down considerably.

We can also examine the contents of the other registers and see if that helps us. Alternatively, let's look at the bottom line, the last bit, which says **"Hunk 0000 Offset 000001c6".** This tells us that the line of program code which caused the hit was **1c6** bytes from the start of the first hunk in the program.

This is now a job for an assembly language monitor or debugger. Any debugger should do – I either use *MonAm*, which comes from HiSoft with *DevPac 3*, or a PD offering called *Amiga Monitor 1.56*, by Timo Rossi. In this case *Amiga Monitor* was quite handy. I simply loaded the executable code into it, noted the memory location it started at, added our hunk offset **(1c6)** to it, and disassembled from memory at that exact point. Lo and behold, this came up:

```
079BEB64 2079 079BEA7A
movea.l $079BEA7A,a0
```

deliberately ignore the AGA chipset and produce software that doesn't take advantage of it in order to appease non-AGA users, then the answer is: I hope not, otherwise the development of the AGA chipset will have been a complete waste of time. If you mean will software producers deliberately write software that works only on AGA machines, the answer is: only if they fancy going out of business very quickly.

DeluxePaint4-AGA works perfectly well on a non-AGA machine. I use it every day on my ageing Amiga 2000, which has a pre-ECS chipset in it. *Wordworth 2-AGA* works fine on it as well. I cannot use the special AGA features, but, well, that's bleedin' obvious, isn't it? I don't have an AGA machine.

But if you mean are you going to be missing out more and more with program upgrades that include special features that work only with an AGA machine, then the answer is: certainly, yes. That's called Progress, which has an annoying habit of not being stoppable.

4. Yes, you're correct about being able to print only 16 shades of grey, but for neither of the reasons you suggest. Incredible as it may sound, it's actually the Amiga that can print only 16 shades of grey. Or to be perfectly accurate, it's a feature of the Amiga's **printer.device,** which prints greys in only four bitplanes. A single bitplane can produce two shades, so four bitplanes can produce 2x2x2x2 = 16 shades.

For colours the Amiga prints in 12 bitplanes, four bitplanes for each of the primary printing colours (cyan, magenta, yellow), so that's 16 shades of each colour, which means that up to 16x16x16 = 4,096 different colours can be printed.

Instead of using greys for your gradient fill, try experimenting with colours. Despite that fact that you have **Greyscale 1** selected as a printer preference (I hope, because **Greyscale 2** prints only four shades) and that your printer is a monochrome one, when the Amiga converts the colours into monochrome dither patterns that represent shades of grey you'll find that gradients can be smoother. They will never be anywhere near as smooth as the gradients you see in this magazine because these are composed of 8-bit greyscales – 256 shades of grey – and printed on a very high resolution PostScript device that is capable of reproducing all 256 shades.

If you want to improve the quality of your Star SJ-48 printouts, check out the *Studio Printer Software* (JAM ☎ 0895 274449), which enables you to print in up to 16.7 million colours and 256 greys by employing special dither patterns and printing techniques. Written by Wolf Faust (the person who wrote that **Star24Plus** driver for Star), *Studio* includes a special Star SJ-48 driver which prints "one-pass" graphics in that printer's 48-pin mode. ***JW***

UPGRADE ADVICE

GENERAL

My Amiga system consists of an A500 with Kickstart 1.2 with an A501 RAM expansion, second disk drive and GVP 52Mb hard disk. I have a number of questions:

1. Apart from booting from the hard drive, would there be any benefit in upgrading to the Kickstart/ Workbench 1.3 combination?

2. Since I am considering upgrading to an A1200, do you know of any way to connect the hard disk to the A1200? I can't afford the A1200 with an internal hard disk.

3. If I cannot connect the existing system, could I connect the existing A500 with hard drive to the A1200 via the serial port and access the hard drive from there? If so, what sort of lead would you recommend?

4. Can the CDTV drive be connected to the back of the GVP drive, and would it work on my A500 with only 512K of Chip RAM?

5. Would ARexx work on a Kickstart 1.2 machine?

C Parker
Reading
Berks.

1. There is an important distinction to make here: Kickstart is an operating system; Workbench is a collection of utilities and extensions which work with that operating system. The only noticeable difference between the 1.2 and 1.3 ROM is the addition of autobooting hard disks – something you are already aware of. Although this upgrade is not as important as the Workbench side, it is worth the effort – it can be done at home in under an hour with the minimum of tools and experience.

However, the Workbench itself was vastly improved, not least with the addition of the Fast Filing System for hard disks. Many of the libraries were extended and various other utilities were added. Some bugs were fixed and the whole thing ticks along a lot nicer. AmigaDOS got a usable Shell for the first time, with a command-line history and memory resident commands. This set is available as a disk-only upgrade and is well worth the £15 (or less) you'll pick it up for.

2. I'm going to stick my neck out here and say no. It can't be done because the A1200 uses a different connector altogether. I have no doubt you are one of thousands in the same predicament, but most will find it more convenient to sell the whole lot and start again. (Now watch someone prove me wrong.)

3. You could if you had Workbench 1.3 – but this is not another reason to upgrade. I'll take a wild guess and

CODE CLINIC CODE CLINIC CODE CLINIC

```
079BEB6A 50F1 0000
st.b     $00(a1,d0.w)
079BEB6E D3C0
adda.l   d0,a1
```

The offending line is **st.b $00(a1,d0.w).** If we examine our *Enforcer* hit, we'll see that **a1** just happened to be **0** when this hit took place, which meant that it wrote to the memory location that happened to be in **d0.** The fix needed is to change the move instruction above it. The **a0** should have been an **a1.**

The author's source code looked like this:

```
LineProcess:  bsr    InitGame
bsrInputLine              ; Input ▼☛
                            a line
suba.l        a1,a1
move.w        CurrOffset,d0
move.l        LineBuffer,a0
st.b 0(a1,d0.l)
add.l         d0,a1
move.l        LineBuffer,a0
jsrPrintMessage
bsrSplitWords
bsrStripWords             ; Take ▼☛
                            out things.
bsrProcessSentence
bsrPrintWords
rts
```

The mistake he made was quite common in assembly language – it's easy to confuse registers, and he just mistyped the line. The problem was that the bug then didn't happen immediately. What **d0** contained would dictate which location got corrupted. **CurrOffset,** which gives **d0** its contents, gets incremented depending on what happens in some later routines, so it was hard for the author to track it down.

Another bug in the above code is that the **st.b** line not only had one bug, but actually had two. The reference to **d0.l** should have been **d0.w.** With the line as it is, if the upper 16 bits of **d0** had been corrupted in some way (by a previous **move.l** for example) then **st.b** could have set all sorts of strange memory locations.

Another thing is that the comments are bad. In fact, they're pretty bad throughout the program, I'm afraid. There are two comments in this bit of code, and neither of them helps. One comments to an already self-explanatory line **(Input A Line)** and the other simply says "take out things". I've written adventures before myself, on the BBC-B in both BASIC and assembly language, and I gave up the assembly language one because it was so big, and so hard to follow because I had not documented it properly. If you are going to program an application of this sort in 68000, you need to pay very special attention to structure and documentation.

The other thing is that the author has an Amiga 3000, which means he has a 68030 chip with an MMU (Memory Management Unit). This allows you to run *Enforcer*. *Enforcer* is a handy tool – you've seen it in action this month and we found a serious bug with it in minutes. If you have a 68020, 68030 or 68040 chip with an MMU then you can run this – and if you're serious about programming on the Amiga, you shouldn't leave home without it! The latest version of *Enforcer* is by Mike Sinz and is called *Advanced Enforcer v37*. It is available for download from CIX and numerous other places, and you get it from Commodore if you buy the Native Developer's Upgrade Kit. If you have the hardware to run it (an MMU) then *run it!*

In the next issue of *Amiga Shopper*, we'll do a special feature on debugging and detail all these debugging tools in greater depth.

THE ENFORCER MAKES A HIT

```
Enforcer Hit! Bad Program!

22-Jul-93      13:55:32
BYTE-WRITE to  0000004E     data=FF  PC: 07A1193E
USP: 07A70E2C SR: 0000 SW: 0711      (U0)(-)(-)          TCB: 07A60D48
Data: 0000004E 0000000A 078B25C8 000002A8 00000000 01E2BD0B 01E03C1B 07A11774
Addr: 078B25C8 00000000 0780E12C 07A11774 07A11842 07A11852 0780DFE4 ————
Stck: 07A118BC 07A1187E 00F958EA 00008000 07A68D68 07B75520 000E0500 6B206469
Stck: 7361626C 65206E65 7374696E 6720636F 756E740A 0A095557 4F524409 4174746E
Stck: 466C6167 73093B20 73706563 69616C20 61747465 6E74696F 6E20666C 61677320
Stck: 28726561 6461626C 65290A0A 0955574F 52440941 74746E52 65736368 6564093B
PC-8: 4EAEFFD0 4E756100 01F06100 003493C9 303907A1 18E42079 07A1184A 50F10000
PC *: D3C02079 07A1184A 4EB907A1 19006100 003C6100 01166100 02126100 00D84E75
Name: "New Process"   CLI: "ADV.X"   Hunk 0000 Offset 000001C6
```

assume what you want to do is access all the facilities of the A500 on the A1200 by (in effect) downloading the software over the link. If this is the case, forget it. The maximum transfer rate is slower than a floppy disk and it isn't worth the hassle. Besides, with the standard software and the addition of a simple (PD) terminal emulator, all you would be able to do is control the A500 from the A1200 or vice-versa.

Don't believe that this can be done? The command from AmigaDOS is simply:

```
NEWSHELL AUX:
```

4. No and, er, no. In theory you could add any SCSI CD drive provided the cable is available, but then you'll need the software to drive the device – use it, in other words. There's more to this than meets the eye, I'm afraid.
5. Yes. But ARexx comes free with the later Workbench (v2 upwards) – so why buy (or risk pirating) what you can get for free? ***MS***

HEWLETT-PACKARD DRIVERS

PRINTERS

Could you tell me if my Amiga 4000 has a suitable driver available for the Hewlett-Packard Deskjet 500 Colour and PaintJet Colour printers? Other than a laser printer, what would be the best printer to use with the 4000?
R Minns
Southbourne
Dorset

The most modern and suitable Amiga printer drivers for use with all Hewlett-Packard DeskJets, all LaserJets and the PaintJet XL300 come with a printing package called *Studio*, available from JAM on ☎ 0895 274449.

As for which is the best printer for the 4000, the answer is simply the best you can afford. If you can't afford a laser printer, then inkjet is the next best option. If you are looking for colour, keep in mind that the HP DeskJet 550C produces better colours than the 500C because it uses four colours to print with – three colours plus black. The 500C uses just three colours (no black), which results in blacks coming out as a very dark green. ***JW***

PS3 CHARS MISSING

SOFTWARE

I've bought *PageSetter 3* and am having difficulty in using it. If I use a large Compugraphic typeface in the bold style, a few characters print fine but most are printed as boxes with little letters in the bottom left-hand corner. This is most apparent printing in Density 4 with the EpsonQ driver.

Also, I cannot transfer any scanned graphics into the graphics editor, even though they are displayed okay on the *PageSetter 3* screen.

I hope to use other fonts with this program but don't seem to get much success. My CGFonts disk gets rejected, and it asks for PS3Fonts. I have been using *PageSetter II* but was told that *PageSetter 3* would be much better.

My set-up is an Amiga 500 Plus with 2Mb of Chip memory, used with a Panasonic KXP-1123 printer and the DaataScan Professional 2 scanner.
Barrie Leete
Minehead
Somerset

This "boxes being printed sometimes instead of characters" thing is a symptom Gold Disk programs display when memory is getting low. I know you've got 2Mb, but it says on the back of the *PageSetter 3* box that 1.5Mb is required, which will give you a hint that you haven't got much memory left to play with after running the program. You've discovered for yourself that if you print in a lower density, which requires less memory, the problem isn't so bad, so I hope you believe me when I tell you that more memory will solve the problem.

It is a fact of life that doing desktop publishing with high-quality

continued on page 53

FONT PAGE NEWS

PAGESETTER II FONT FOLLY

SOFTWARE

I found the tips you gave in *Amiga Shopper* 25 regarding *PageSetter II* very useful, particularly the problem with CGFonts. The cover disk on that same issue provided two archives giving 13 CGFonts in all. I un-archived these fonts but I cannot get *PageSetter II* to recognise them. I notice that for each font supplied with *PageSetter II* that there are .atc, .lib, and .metric files, but the CGFonts on the cover disk have .dat, .lib, and .metric files. Do I need some type of conversion program to make a .atc file from a .dat file?

I thought a CGFont was a CGFont was a CGFont. What do I have to do to use your cover disk CGFonts with *PageSetter II*?
Melvyn Pearce
Wedges Mills
Staffordshire

The best thing to do is upgrade your *PageSetter*. The CGFonts on the cover disk will work with the current version, *PageSetter 3*, which is much faster and more stable than *PageSetter II* and has many new features.

If you insist on sticking with *PageSetter II*, then prepare yourself for a hunt around the PD libraries for a suite of programs by Adrian Aylward called *FMDTP*, which stands for *Font Manipulator for DTP*. Included with Version 3 of this package is a program called *MkAtc*, which creates **.atc** for *Professional Page 1.3* and *2.0* and *PageSetter II*.

My guess is that most libraries will say "Sorry, dunno what you're talking about", because *FMDTP* is now two years old, was never released into the Fish Disk collection and was spread mainly by bulletin boards and by Adrian himself, who has long since sold his Amiga. However, you could try Seppi Evans at George Thompson Services ☎ 0707 391389. ***JW***

HARD LEARNING

SOFTWARE

I have an Amiga 1200 with a 60Mb hard drive of three partitions: Workbench (30Mb), Programs (20Mb) and Data (10Mb). On the Programs partition I have *PageSetter 3* and would like to know how to alter the startup-sequence to take advantage of all the fonts on my Workbench partition.

My other problem is trying to get *Intellifont* to work. When I click on its icon I get the message "Bullet not correctly installed – please re-install (file fonts:_Bullet/if.ss missing)".

I previously owned an Amiga 500 Plus with floppy drives only, and was able to alter the startup-sequence on a copy of my Workbench disk by going into the Shell, typing

```
Ed df0:s/startup-sequence
```

and adding the line

```
Assign FONTS: AmigaFonts2.0:fonts defer
```

but this doesn't seem to work on my hard drive Workbench partition, even though I altered the line to read "AmigaFonts3.0:fonts".
Joan Gibson
Liverpool

When you installed *PageSetter 3* on to your hard disk, the single Compugraphic Intellifont that comes with it – (CG)Times – is installed by default into a directory named **CGFonts** in the **PageSetter3** directory. This is where *PageSetter 3* will always look for any Compugraphic fonts you want to use. It will also have installed a number of Amiga "bitmapped" fonts into the **Fonts** directory on your Workbench partition, along with a number of **fontname.metric** files that *PageSetter 3* requires in order to space characters correctly.

Although there is no mention of it in the manual, you should have got a piece of paper with *PageSetter 3* telling you about the *FontManager* program. This instructs you that it saves certain files in the **CGFonts:** volume after converting a font from PostScript Type 1 format. To create this volume on a hard drive you should add to your **s:user-startup** file a line like this:

```
Assign CGFonts: Programs:☛
    PageSetter3/CGFonts
```

CAUTION

(**Note** that you should *not* add this to the **s:startup-sequence** file – you should *never* touch that.)

The majority of the fonts in the **Fonts** directory on your Workbench partition are Amiga bitmapped fonts. Although *PageSetter 3* will work with these, they will print out very jagged because they are low-quality, low-resolution fonts intended primarily for screen display purposes. If you want higher-quality fonts for use in *PageSetter 3*, check the adverts in this issue for the many inexpensive PD and shareware collections that are available.

Your problem with the *Intellifont* program is literally staring you in the face. A certain file that *Intellifont* requires in order to function correctly – namely **if.ss** – is missing from the **Fonts:_Bullet** directory. Put your **AmigaFonts 3.0** disk in the floppy drive, open a Shell window and type:

```
Copy AmigaFonts3.0: Fonts: all
```

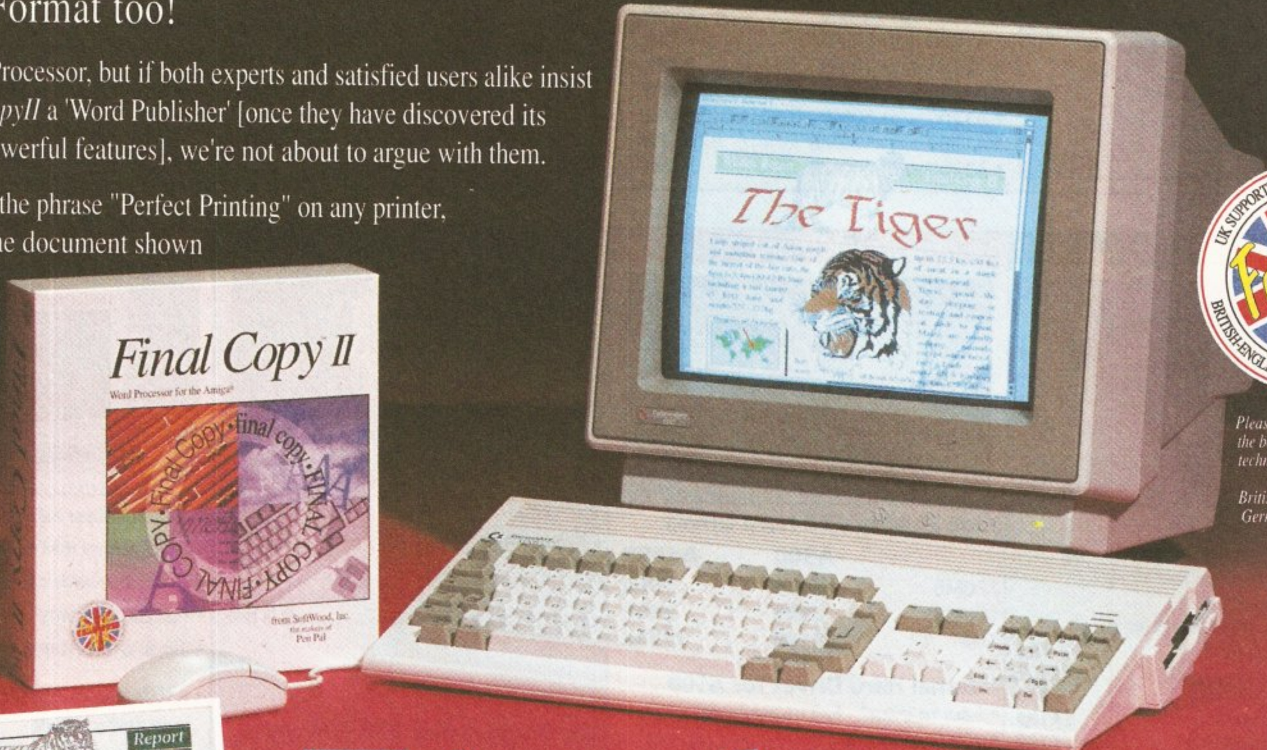
This will copy the entire contents of the **AmigaFonts 3.0** disk into the **Fonts** directory on your Workbench partition. If you run *Intellifont* now you'll find it will work perfectly. ***JW***

Who says Final Copy II is the Best Word Publishing Program?

[N]ot *just* thousands of satisfied Amiga owners, [b]ut Amiga Format too!

[W]e call it a Word Processor, but if both experts and satisfied users alike insist [on] calling *Final CopyII* a 'Word Publisher' [once they have discovered its [un]ique blend of powerful features], we're not about to argue with them.

[Fi]*nal Copy* coined the phrase "Perfect Printing" on any printer, [an]d we mean it... the document shown [be]low proves it!
[W]e hope you too [wil]l find that *Final [Co]pyII* is Perfect [for] *your* printing!



UK SUPPORTED VERSION
For the U.K.
BRITISH-ENGLISH SPELLING DICTIONARY & THESAURUS

Please look for a UK logo on the box as your guarantee of technical support and future upgrade offers. British-English, French and German versions available worldwide.



Wildlife Report

The Tiger

Large striped cat of Asian jungle and mountain regions. One of the largest of the big cats, the tiger is 3-4 m. (10-13 ft) long, including a tail 1 m. (3 ft) long, and weighs 227-272 kg. (500-600 lb.). Both sexes are immensely strong, enabling them to bring down and overcome animals the size of buffaloes. Their main prey is deer, antelope, wild pigs and bushbucks.

Lacking the stamina for a prolonged chase, tigers rely on their striped markings to conceal their movements as they silently creep up on their victims before making a sudden rush from behind. They kill by first knocking the animal down with a blow of the forepaw, or pulling it down with the claws, then suffocating it with a powerful bite at the neck or throat. Tigers swallow meat in large chunks, using their teeth to cut rather than to chew, and eating up to 22.5 kg. (50 lb.) of meat in a single meal.

Tigers spend the day sleeping or resting and emerge at dusk to hunt. Males are usually solitary animals, except during the breeding season. Each male marks off a territory of from 65-650 sq. km. (25 sq. miles), which contains several females and which he defends against other males, marking the boundaries by spraying a mixture of both his urine and scent.

Tigers once ranged all the way from China to Turkey, but today their range are largely confined to India and South-east Asia, with smaller populations in China, Siberia and Turkestan.

Region of Habitat

[Fin]al Copy coined the phrase "Perfect Printing on any Printer". We mean it - this document proves it!

[Cre]ated in Final Copy II and printed on a standard 24-pin Citizen, it shows a [sm]all number of Final Copy II's features: Smooth Scaleable Outline Fonts, [Mu]ltiple Columns, Drawing Tools for Boxes, Borders, Shadows, Lines and [Arrow]s, White-Out Text, Text Printed over Graphics, Text Obliquing, Auto-Flow [a]round Graphics and of course, Import of Colour/Mono Graphics Pictures.

Final CopyII

£99.95 or less
Release 2.0 (AGA)

Word Publishers go beyond simply producing normal letters and documents (at which *Final CopyII* naturally excels) and progress into a world where how the whole document looks is just as important as what it says. Admittedly, this can be achieved with Desk Top Publishers, but they can't easily be used as Word Processors, especially when a good looking letter needs creating quickly - they're far too cumbersome. This is where *Final CopyII* offers the perfect balance between the two requirements. Ease and speed of use, combined with complete control and perfect final printed presentation. **Complete control over how documents look, now YOU have it at your finger tips on your Amiga!**

Features include:
On-Screen Drawing Tools for generating boxes, borders, and lines or arrows at any angle, Multiple Newspaper Style snaking columns, combined with the unique ability to use the same PostScript outline fonts - on absolutely any printer in portrait or landscape. Text Auto-Flows around graphic objects and imported pictures, which can be placed anywhere, scaled and cropped, with no loss of printing quality. Text can also be printed actually over graphics (refer to "The Tiger" heading on our document).All these features mean that no matter what you may have thought, no other Amiga Word Processor has all the capabilities that *Final CopyII* users now simply take for granted!

We don't have room to list EVERY feature that *Final CopyII* can boast, so please call for your free DETAILED information pack now.

SoftWood - Quality software for your Amiga

With Final Copy II you're not just getting a one off product! SoftWood are acknowledged as the World's leading software company who develop for the Amiga, and no other system. Once you're a registered SoftWood product owner, you'll be gaining access to unlimited free technical support (others charge), and preferential upgrades to new versions of this and other exciting products being developed right now!

Compatible with all Amigas from A500 to latest A1200/A4000 ranges with either second floppy or hard drive.Minimum 1Mb. available free RAM required (A600 hard drive - 1.5Mb). As with all advanced graphical programs, extra memory (eg. 1.5/2Mb. - more the better) is required to exploit all features.

Available from all good Amiga Software Dealers,
or contact your nearest SoftWood Agent for a list of stockists in your country....

SoftWood Products Europe - UK
PO Box 19 Alfreton Derbyshire DE55 7BP
Tel: 0773 836781 Fax: 0773 831040

TupSoft - Australia/New Zealand
9 Miller Avenue Hornsby NSW 2077
Tel: (02) 477 5353 Fax: (02) 476 5736

VEM (Essonne Mailing) - France
14 rue de Bois Sauvage 91055 EVRY Cedex
Tel: (1) 64.97.96.54 Fax: (1) 69.91.19.25

Amiga Oberland - Germany
In der Schneithohl 5 W-6242 Kronberg 2 Frankfurt
Tel: 06173 65001 Fax: 06173 63385

Please rush my personal copy of the detailed Final Copy II information pack, including samples from popular printers, and a list of stockists to... (clip the coupon or call 0773 836781 now!)

Name & Address: -

ams

easonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Season

THE CENTRE OF TE

WTS ELECTRONICS LTD, CHAUL END LANE, LU



Amiga 1200 Packs

- 32-bit 68020 Full power
- On site warranty
- Two Python joysticks
- Free Paint package software
- Mouse mat

• A1200 Standalone	£269
• A1200 with 20MB	£359
• A1200 with 40MB	£399
• A1200 with 60MB	£439
• A1200 with 80MB	£459
• A1200 with 120MB	£529
• A1200 with 200MB	£599



Amiga 4000 Packs

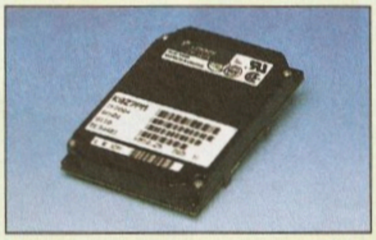
- AGA Chip set
- 68030/40 processor
- Co-pro option
- 2MB/4MB RAM

• A4000 030 with 80MB HD & 2MB	£89
• A4000 030 with 80MB HD & 4MB	£99
• A4000 030 with 120MB HD & 4MB	£109
• A4000 040 with 120MB HD & 6MB	£213

A500 Plus

• Amiga 500 Plus	£18
• Cartoon Classic pack	£21

A1200/A600 Hard Drives



- Easy to install upgrade kits
- Full instructions and cables where necessary
- All drives supplied with formatting instructions and software
- Free fitting available - phone for details

• 20MB HD Upgrade Kit	£95
• 40MB HD Upgrade Kit	£135
• 60MB HD Upgrade Kit	£169
• 80MB HD Upgrade Kit	£189
• 120MB HD Upgrade Kit	£269
• 200MB HD Upgrade Kit	£329

A1200/A600 Memory Upgrades

• A1200 PC1204 4MB + clock (Co-pro option)	£178
• ProRam 2MB PCM-CIA A600/A1200	£118
• ProRam 4MB PCM-CIA A600/A1200	£172
• ProRam 1MB A600	£39
• A1200 Real Time Clock	£17

Amiga 500 Hard Drives



High Quality GVP Hard Drives

	A500	A1500
120MB	£429	£382
500MB	£989	£942
1GB	£1189	£1142

Internal Hard Drives for A500

- Easy to install - Full instructions
- ICD technology

• Pro Internal 20MB hard drive	£175
• Pro Internal 40MB hard drive	£245
• Pro Internal 80MB hard drive	£325
• Pro Internal 120MB hard drive	£375
• Pro Internal 200MB hard drive	£475
• A570 CD drive	£149

Monitors



• Philips 8833 MKII Monitor	£219
• Commodore 1084s	£194

- When purchasing with an Amiga deduct **£10** from above pricing

• Dust cover for the above	£5

SVGA /Multisync Monitors



- 14"/20" Super high resolution colour displa
- Professional IBM compatibility
- Complete with cable
- Full UK warranty
- Tilt & swivel stand

• A1200 SVGA Monitor (Displays high productivity modes)	£22
• A1200 SVGA+ Monitor (Medium resolu tion, displays all modes high and low)	£27
• A1200 SVGA+ Monitor (High resolution displays all modes)	£36
• A1200 SVGA plus 20" Monitor (Displa all modes ideal for DTP,CAD etc.)	£104

Workstations



- Ergonomically sound
- Facilitates up to three external floppy drives
- Made in the UK
- Strong and robust
- Aesthetically pleasing
- Keep your desk neat and tidy
- Supplied complete and assembled with free mouse mat

• A500 Workstation	£36
• A600 Workstation	£36
• A1200 Workstation	£36
• Workstation Coverall dust covers	£7

Peripherals



• 100 Capacity lockable disk box	£5.99
• Squick mouse	£13.99
• Mouse mat	£1.99
• TDK high quality DSD (10) disks	£9.99
• Computer Mall DSD (10) disks	£6
• Jet Fighter joystick	£13.99
• Apache joystick	£6.99
• Python joystick	£9.99
• Zipstick joystick	£14.99
• Screen Beat speakers	£29
• Zi-Fy speakers	£39
• A500/A600/A1200 Dust covers	£4.99
• A500 Modulator	£36
• Mini Office package	£54.99
• Supra 2400 Modem	£89
• Supra Fax Plus Modem	£148
• Supra v.32 BIS Fax Modem	£358

Scanners



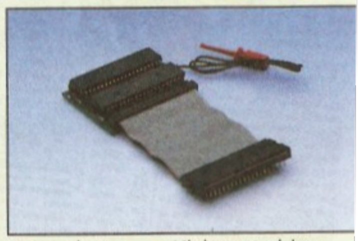
- Allows image processing in a useful and unique fashion
- Comes complete with operation manual
- One of the fastest growing applications for home and professional users
- High specification coupled with cost effective pricing

Power Hand Scanner

- 64 greyscales 100-400 DPI
- Thru'port to printer
- Fully compatible with Delux Paint 4, etc.
- Advanced software

• Power Hand Scanner v3.0	£92
• Power Hand Scanner Colour	£229

Pro ROM Swapper



- Swap between Kickstart chips
- Fits A500, A500+, A600,A1500
- Auto swapping via keyboard cont
- Flexible cable allows the swapper work in conjunction with accellerators etc.
- Simple to fit - full instructions

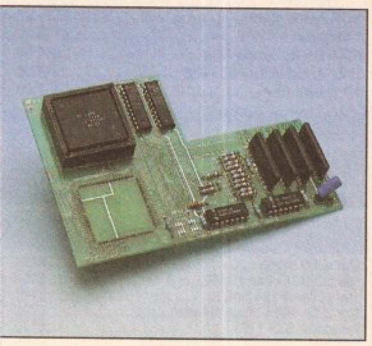
• Pro ROM Swapper	£1
• Pro ROM Swapper + 1.3ROM	£
• Pro ROM Swapper + 2.04ROM	£
• Workbench 2.04 plus manuals	£

al Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale

NICAL EXCELLENCE

Est. since 1984

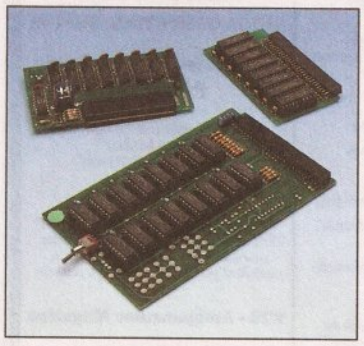
, BEDS, LU4 8EZ TEL (0582) 491949 (6 LINES)



Pro Agnus 2MB

• Provides a full 2MB of Chip Memory for the Amiga 500 and A1500/2000 • Designed and built in England • Supplied with 8375 Obese Agnus • Includes 2Mb Memory on board in the form of low power Zips • Allows the processing of elaborate animation and sound sampling • Provides the same max. chipmemory as the A3000/A600 &500+ • Increases addressable memory space from 9MB to 10MB • Complete with full instructions and flying leads • British made

• Pro Agnus 2MB **£139**
(Free fitting available - Phone for details)



A500 Memory Expansions

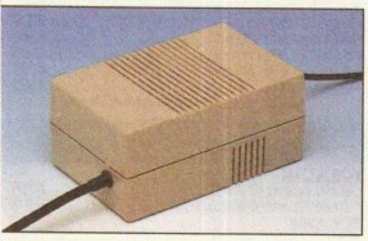
A500 Pro-RAM 0.5 Meg. Upgrade
- Allows 1MB software to run
- Chip memory compatible
- British made

• Without clock	**£16**
• With clock	**£19**

A500 Pro-RAM 1.5 Meg Upgrade

• Gives a full 2MB of memory	**£74**
A500+ 1MB Meg Upgrade	**£29.95**

High Current Power Supply



Allows the addition of peripherals without damage to computer or power supply
Why risk damaging your expensive kit when one simple investment will ensure total peace of mind now and for the future
Switch mode design
Full crow bar projection
British made

A600 Power supply unit	**£44.95**
A500 Power supply unit	**£44.95**
A590 Power supply unit	**£44.95**
A1200 Power supply unit	**£54.95**
A2000 Power supply unit	**£99.95**

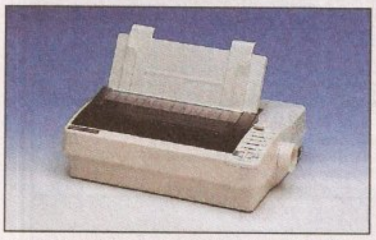
Cumana 3.5" External Drive



- High Quality
- Renowned and proven reliability
- Top notch specification
- Anti-click
- Long moulded cable
- Slimline design
- High impact plastic

• Cumana external drive	**£59**
• Cumana external drive + 100 capacity disk box	**£62**
• Cumana external drive + 100 disk box + 20 blank disks	**£68**
• A500/A500+ Internal replacement disk drive	**£46**

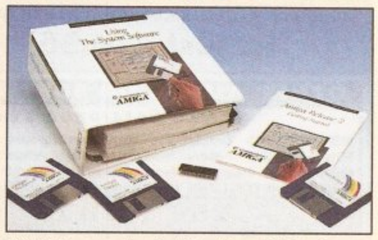
Printers



- High quality premium range of Amiga printers
- Two year manufacturers warranty.
- Complete with cable to Amiga 500
- Citizen registered for Dealer plus service

• Swift 1200+ (9 pin, 80 column, 144 CPS draft, 30 NLQ, 4KDB Buffer)	**£129**
• Swift 90 Colour (9 pin, 80 column, 216 CPS draft, 54 LQ, 45dB quiet mode)	**£168**
• Swift 200 (24 pin, 80 column, 216 CPS draft, 72 LQ, 43dB quiet mode)	**£186**
• Swift 240 (24 pin, 80 column, 240 CPS draft, 80 LQ, 43dB quiet mode)	**£259**
• Swift Pro Jet (80 column, 50 nozzle print, 360 CPS draft, 120 LQ, HP emulation 8KB buffer, 3 fonts, vertual lazer quality)	**£299**

Chips and Spares



• WTS have sole distribution rights from Americas biggest Commodore chip distributor

• Workbench 2.04 Kit (Includes manuals, disks & chip)	**£78**
• Kickstart 2.04	**£24**
• Kickstart 1.3	**£26**
• Kickstart ROM Swapper (Swap between kickstarts)	**£18**
• Fatter Agnus 8372	**£49**
• Obese Agnus 8375	**£54**
• High Res Denise	**£29**
• 1MB x 9 Simms (3 chip)	**£29**
• 1MB x 4 Zips	**£14**
• 8520 CIA	**£13**

SALES HOTLINE 0582 491949 (6 LINES), 0480 471117 (24HR), FAX ON 0582 505900

Credit Card ordering by phone is easy. Simply phone our sales hotline quoting your credit card number., expiry date, name and address and the products you wish to order and we'll do the rest. Alternatively write the above details on your letter when ordering by post.

When ordering by post in cheque form please write your cheque card guarantee number on the reverse of the cheque and send along with your order. Postal Orders are also accepted.

NO DELIVERY CHARGES TO UK MAINLAND. MINIMUM ORDER AMOUNT £15.00.
Should you wish your order to be sent by courier service please add £5. This method includes Comprehensive insurance.

WARRANTY: One year return to base (excluding chips).
ONE YEAR EXTENDED WARRANTY: Available on all products (excluding chips) at 10% of purchase price when ordering.

WHERE TO FIND US!

Head Office
WTS Electronic Ltd
Chaul End Lane
Luton
0582 491949

Computer Mall Bedford
No.16 Downstairs
The Harpur Centre
Bedford
0234 218228

Computer Mall St. Neots
No.6
Priory Mall Shopping Centre
St. Neots
0480 471117

Computer Mall Hertford
49 Railway St.
Hertford
0992 503606

Computer Mall Dunstable
84 High Street North
Dunstable
Bedfordshire
0582 475747

prices quoted or products stocked are subject to stocking levels and availability. WTS cannot be held liable or supply reimbursement for force majeure, or items, which are out of stock due to demand or low stock at its suppliers which may result in yed delivery or non delivery, payment with order, please allow 28 days for delivery. WTS reserve the right to ammend prices, revise packs, specifications and or substitute product wihtout prior notice at any time without liability upon itself. E & OE

al Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale • Seasonal Sale

continued from page 48

scalable fonts, and printing the results at high resolutions (densities), requires lots of memory. No matter how cheap-and-cheerful the DTP program (or word processor for that matter), scalable typefaces printed in large sizes at high resolutions requires lots of memory. You may think 2Mb is a lot, but in DTP terms, unfortunately, it isn't even a sensible bare minimum. Lack of memory is also why you can't send graphics to the graphics editor.

As for your **CGFonts** disk, when you boot from the *PageSetter 3* disk the **CGFonts:** logical device gets assigned (in the startup-sequence) to **"PS3Fonts:CGFonts"**. If you want to use another disk of fonts, make sure it is called **CGFonts** and then simply remove the line from the startup-sequence that assigns **CGFonts:**.

Keep in mind that *PageSetter 3* handles Compugraphic fonts in a very different way from *PageSetter II*. There are some new "system" files to do with fonts that have to be in the **CGFonts:** device (or on the disk called **CGFonts**). The *PageSetter 3* floppy disk installation program includes an option to upgrade your old **CGFonts** disks. ***JW***

WHERE'S MY SCALABLE FONTS?

PRINTERS

I have recently bought a Hewlett-Packard DeskJet 500C and after following your advice to obtain the best printer driver available I am settling down to using it with the *Excellence!* 3.0 word processor. I have an Amiga 500 Plus with Workbench 2.04 and a GVP 52Mb hard drive.

Am I correct in thinking that Workbench 2.04 is supposed to support scalable fonts? Is it through the *Fountain* program on the fonts disk, or is this misinformation again? I would like to utilise scalable fonts to improve the presentation of my documents, which currently feature some quite jagged text. Is this as good as it gets, or do I have to buy specific software to get this facility?
Pierre Weinzweig
Horfield
Bristol

For Workbench 2.04 to be able to use scalable fonts you need to copy the **"diskfont.library"** file from the **Libs** directory on the **AmigaFonts** disk into the **LIBS:** directory on your hard disk. Then copy the entire **Fonts** directory from the **AmigaFonts** disk to your **FONTS:** directory:

```
Copy AmigaFonts2.0:Libs/☛
     diskfont.library to LIBS:

Copy AmigaFonts2.0:Fonts ▼☛
                to FONTS: all
```

After re-booting (in order to re-initialise the **"diskfont.library"**) you can now use the *Fountain* program to create specific-sized bitmap versions of the three outline typefaces provided with Workbench 2.04. Press the [Help] key after running *Fountain* for more details about what *Fountain* does and how to use it. *Fountain* is useful mainly for creating specific bitmap fonts for use by the system in requesters, title bars and so on, so that text doesn't have to be scaled on the fly all the time.

Fountain won't help you get less jagged text output from *Excellence!* 3.0. While that program imports scalable fonts, it doesn't output them as scalable fonts, it outputs them as bitmap fonts. What *Excellence!* 3.0 prints is exactly what is on the screen – a screen dump if you like – at the screen's resolution, which is about 75 dots per inch. In other words, despite the claims in the advert and on the packaging, *Excellence!* 3.0 does not "support" scalable fonts, it just imports them.

Wordworth is the only Amiga word processor that currently supports the Workbench "Intellifont" scalable fonts properly – by "properly" I mean it is able to print them at the highest resolution supported by your printer.

Final Copy II also supports scalable fonts properly, but uses its own proprietary font format, not the standard Workbench Intellifont format. Another not-too-expensive alternative is the new *PageSetter* 3 DTP package, which also supports scalable fonts properly, and comes with "hotlinked" text and bitmap (graphics) editors. (For the full in-depth review, see *Amiga Shopper* 28 – if you missed that, see page 108 for the *AS* back issue service.) ***JW***

#@#@#@ PAGESTREAM!

SOFTWARE

For some months now I've had an ongoing problem with *PageStream*. Now that I've upgraded to version 2.2, the keyboard has decided to go native. Gone are the pound sterling and double quotes symbols, and in have come # and @.

I accommodated this niggling situation until today, day two with my new Amiga 1200. What was to have been a one-hour session has seen a whole day go by while I have tried everything I could to restore the English keymap. Splashing about in the CLI, I eventually managed to delete the usa1 file from devs/keymaps and copy the old keymaps/gb file from the PageStream 2.1 disk.

Great! There it was: gb 1,328 ——rwed. So I shut everything down, booted the *PageStream* 2.2 disk and confidently typed #.

You get the picture? Please save me from evermore having to type Ctrl-D-163 to get a £ symbol.
Peter Gibb
Winshill
Derbyshire

The startup-sequence on my *PageStream* 2.2 disk looks like this:

```
PageStream:system/setmap gb

loadwb

endcli
```

Without that first line the keymap will default to the internal Amiga keymap, which is a USA one. So make sure the **gb** file is in the **devs/keymaps** drawer on the *PageStream* boot disk, and then make sure the startup-sequence file in the **S** drawer on the *PageStream* disk looks like the one listed above.

From a technical point of view this is a really naff startup-sequence, especially for the A1200; it is the absolute bare minimum to load Workbench. A much better idea would be to boot from your Workbench 3.0 disk, and when Workbench has loaded simply insert your *PageStream* disk into an external floppy drive and double-click on the *PageStream* program icon. But if you've only got one floppy drive I guess it's less complicated to boot from the *PageStream* disk. ***JW*** AS

LISTINGS CORRECTIONS

CODING

Because of technical problems with our image-setting equipment, some of the program listings in *Amiga Shopper* 28 and 29 were printed with their endings missing. We've printed the last few lines for each of the offending programs below. Sorry for the inconvenience.

ISSUE 28
C PROGRAMMING

The program in the box headed **ADDRESS_BOOK.C** on page 87 should have the following at the end:

```
}
```

And add the following to the end of the program in page 88's **ADDRESS_FUNCTIONS.C** box:

```
  }
/* All done, quit to menu */
return;
}
```

AMIGADOS

The listing in the box on page 102 should have this as its final line:

```
7. Set Arg(Argnum) {Arg}
```

ISSUE 29
READER LISTINGS

Chris Cox's **AS Clock** program on page 63 also fell victim to our image-setting gremlin. Add the following to the end:

```
dc.l 0          ; No check marks
dc.l 0          ; Title pointer
dc.l 0          ; No screen
dc.l 0          ; No bitmap
dc.w 0          ; Min X and Y sizes
dc.w 0
dc.w 0
dc.w 0
dc.w WORKBENCH            ;Workbench window

Window_Title:   dc.b    "00:00:00",0
  even
  Window_Title_SIZEOF  equ    *-Window_Title-2
Scrn_Title:     dc.b    "Amiga Shopper ▼☛
                 Clock by Chris Cox in 1993"m
```

CODE CLINIC

The listing in Code Clinic, page 47, should have this appended to it:

```
;
  end
```

AMOS

And finally (phew), AMOS. The last printed line should have the following added to it, after the comma:

```
$EEE, $FFF
```

And then add the final line:

```
End Proc
```

WeServe of Hampshire Established 8 years

High quality products. Full technical support.

Visit our showrooms. See before you buy.

High quality products. Full technical support.

Visit our showrooms. See before you buy.

Amiga Workstation /Expansion System
Monitor stand with shelf for drives etc. Strong metal construction made from 14SWG steel epoxy coated. No Cables or mouse are included.
Special price £27.50

All Citizen printers have a 2 year warranty

Swift 90 *9pin Colour**
Advanced 9pin printer, (Swift 9 replacement).*optional colour. Price with cable & paper
90 Mono £145
90C Colour £169

Swift 240 *24pin Colour**
With free PenPal
240 Mono £245
240C Colour £265

Swift 200 *24pin Colour**
Enhanced 24pin printer, (Swift 224 replacement.) *optional colour. Price with cable & paper
200 Mono £200
200C Colour £224

Swift Auto Sheet Feeder £79

Citizen 120D+
with cable & paper £115

Dust Covers
For Printers, Monitors, Computers most types in stock from £4.70

Citizen's Print Manager
These advanced printer drivers transform colour printout's to laser type quality
Version 1 (224 & 24E) £5
Version 2 (Swift series 2) £10
Drivers 1/2 price if bought with a printer

Printer Drivers
Canon BJ-10e/ex £5
Deskjet 500 Colour £10

Panasonic KXP1123
Probably the best 24pin mono printer available. With cable & paper £169

Panasonic/Epson
KXP4410 Laser 5ppm	519
KXP1170 9pin	134
KXP1124i 24pin	215
KXP2180 9pin Colour	189
KXP2123 24pin Colour...	229
Epson LX400 9pin	119
Epson LQ570 24pin	265

Prices include VAT cable & paper

Bodega Bay *
A500 expansion system with built in PSU & SCSI controller. Turns a 500 into a 1500. £149

360K drive £29

Golden Image Mouse
for Atari ST & Amiga £13.90

* Deskjet 510
HP 300dpi Inkjet printer. Laser quality at dot matrix price.
3 year warranty. With cable & paper £259

* Deskjet 500C
300dpi colour inkjet printer. Colour laser quality at 1/10 of the cost.
3 year warranty. With cable & paper £299

* Deskjet 550C
300dpi colour inkjet printer. Colour laser quality, with colour and black cartridges resident.
3 year warranty. With cable & paper £519

Deskjet Portable
* 3 year warranty. With cable & paper £229

Floppy Drives

Cumana CAX354
£52.90 1M external While stocks last

New Roctec/Zappo
All Amigas A500-A1200 1M external drive £52.90

Printer Packs
All printers are supplied with a printer pack consisting of printer paper and a connection cable. *Free of charge*
A stand is £5.00 extra (with a printer)

Ink Refills
BJ10 twin refill varoius colours 15.90
Deskjet twin refill various colours 15.90
(We stock 200 types of ribbons)

Canon BJ-10ex
360dpi Inkjet printer with cable & paper £199
BJ10 Auto Sheet Feeder £52

Canon BJ-200
Inkjet + Sheet Feeder with cable & paper £299

Star LC100
9pin colour with cable & paper £149

Star
with cable & paper

LC20 Mono 9pin	£123
LC200 Colour 9pin	£179
LC2420 Mono 24pin	£185
LC24100 Mono 24pin	£175
LC24200 Colour 24pin ..	£249
SJ48 360dpi Inkjet	£199
Auto Sheet Feed most models	£59

Kickstart Upgrades
Commodore 2.04 full upgrade	79.00
Kickstart ROM only v2.04	41.50
Kickstart ROM only v1.3	29.00
Phoenix rom sharer	24.95
Keyb'd operated rom sharer	24.95
Fatter Angus custom chip	37.50

True Mouse
for Atari ST & Amiga £14.90

Happy Mouse
for Atari ST & Amiga £14.90

*** = Special Prices**

GVP Series 2
A500 Hard Disks *

50Mb Hard Disk	£239
80Mb Hard Disk	£339
120Mb Hard Disk	£385
40Mb A530 Combo	£459
80Mb A530 Combo	£549
120Mb A530 Combo	£645

A1500 Hard Disks

40Mb Hard Disk	£275
80Mb Hard Disk	£319
120Mb Hard Disk	£395
Controller (no disk)	£129

GVP ram £55 per 1Mb

GVP PC Emulator £99
286 16MHz Emulator for HD8+/A530

Commodore A590
20M Hard Disk for A500 £189

Commodore Multiscan Monitors *
1940 £269 14" Stereo Col. Dot pitch .39
1942 £369 14" Stereo Col. Dot pitch .28

Ram Upgrades
A500 0.5-1Mram +clock	£24.90
A500 0.5-1Mram no clock ...	£19.90
A500+ 1Mram +clock	£44.50
A600 CBM 1Mram no clock	£29.90

Commodore 1084
14" Stereo Colour Monitor. 0.42mm Pitch. Medium Res. +stand
£179 with cable
£175 without cable
1084ST with stand add £10

Philips CM8833 MK2
14" Stereo Colour Mon. 240V UK. 0.42mm. Medium Resolution
£209 with cable
£205 without cable
Add £6 for Amiga / ST game

Accessories
3M Joystick/Mouse lead	3.75
A500 Printer cable	7.95
Modulator/Disk Extension	10.95
23way Plug or socket	2.95
Computer Dust Cover	4.70
Type Through Covers	17.50
Mouse Mat (thick soft type) ..	4.95
Mouse House	2.95
1M internal 3.5" drive	49.00
A500 replacement PSU	39.00
A590 replacement PSU	49.00
Rocgen Plus - Genlock + ..	129.00
Disc Wallet for 32 disks	7.95
CBM A1011 Floppy drive	48.00
A3220 Display Enhancer	99.00

Amiga 500+
Cartoon Classic Pack £215

Amiga 600SD
(D.Paint III, Grand Prix, Putty, Pushover)
Wild Weird & Wicked £179
with 1 free game £169

Amiga 600HD
(20M Hd, Trivial P., Epic, Rome, Myth)
Epic Pack £299
20M Hd NO Soft/W £279

Zool Pack add £20

Comic Relief Pack add £10

A1200 *Now with 2 free games*
5x faster. Workbench v3. 2M ram. Custom graphic 256K col. from 16.7M

No Hd	£279
80M Hd	£495
120M Hd	£529

Official Commodore approved Hard Disk with Wang on-site.

Amiga A4000
4000/030 2M 80Mb Hd	£895
4000/030 2M 120Mb Hd	£975
4000/030 6M 80Mb Hd	£1049
4000/030 6M 120Mb Hd	£1139
4000/040 6M 120Mb Hd	£1949

* A570 CD Rom £139
while stocks last

* Opal Vision £499
while stocks last

SONY DISKETTES
SONY branded
(lifetime warranty)
(100% certified error free)

10x 3.5" DS/DD 135tpi	7.50
50x 3.5" DS/DD 135tpi	32.30
100x3.5" DS/DD 135tpi	59.93
250x3.5" DS/DD 135tpi	141.00
1kx 3.5" DS/DD 135tpi	540.50

DISKETTES
SONY / DYSAN bulk
(lifetime warranty)
(100% certified error free)

10x 3.5" DS/DD 135tpi	5.95
50x 3.5" DS/DD 135tpi	21.86
100x3.5" DS/DD 135tpi	39.60
250x3.5" DS/DD 135tpi	94.88
1kx 3.5" DS/DD 135tpi	379.53
40 x 3.5" Disk box with lock......	5.49
100 x 3.5" Disk box with lock....	7.50

Carriage on 50+ disks £3.53

Tech. Support 647400

Phone for our 70 page catalogue. All prices include 17.5% VAT
EDUCATIONAL AND GOVERNMENT ORDERS WELCOME
All products have a 30 day money back & 12 month warranty.
Prices are subject to variation without prior notification.
Please phone for express clearance of cheques. Credit APR 29.8%
Established 8 years. 3 minutes from M27 Junction 11. Free parking.
Open 9 to 5.30 Monday to Friday & 9 to 5 Saturday. Carriage/order.
Postage 94p or £3.53 Securicor £6.46 Securicor AM £11.75

OCT 93

WeServe

Larger items delivered by Securicor

VISA

Amiga/Shopper Dept.
40-42 West Street
Portchester Hants
PO16 9UW
Tel: 0705 647000

WeServe *Best for service* Telephone 0705 647000

Power to your Base

Amivision's PowerBase has migrated from its modest licenseware roots to compete on the commercial stage. Mark Smiddy asks: given what it's up against, is it good enough?

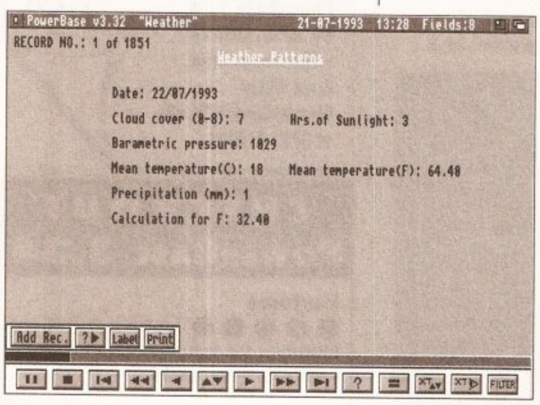
Databases are probably the easiest applications to baffle a first time user with – the list of possible uses is endless. Basic database applications are fairly simple to construct – so much so that many beginner's BASIC tutorials give simple instructions on exactly that.

Extending the basic principle to something usable in the field is rather more difficult, and this has guaranteed a decent trickle of such applications into the commercial sector over the years. Such programs can be roughly divided into two groups by functionality: *flat-files* are uncomplicated to use and suited to a large number of simple applications; *relational* databases are a more recent idea and are primarily used when very large amounts of data are being processed.

HARD INSTALLATIONS...

PowerBase is a memory-based flat-file, which means it is intended for simple applications where comparatively small amounts of data are being handled. (The exact amount of information in any data file is defined by what is being stored. Around 1,500 names, addresses and telephone numbers is typical, although specifications claim up to 10,000.)

The most instantly notable feature of *PowerBase* is its Workbench 2 look-and-feel. The program gives its AMOS origins away because it will not run in some of the enhanced screen modes – make sure you start this one in straightforward PAL. *PowerBase* is not automatically NTSC-aware and AMOS does not like "Productivity" mode. If that sounds bad, remember that it is a budget offering, so you will not have to mortgage Aunt Agnes to own it; as such, anyone can forgive that little inappropriate quirk.



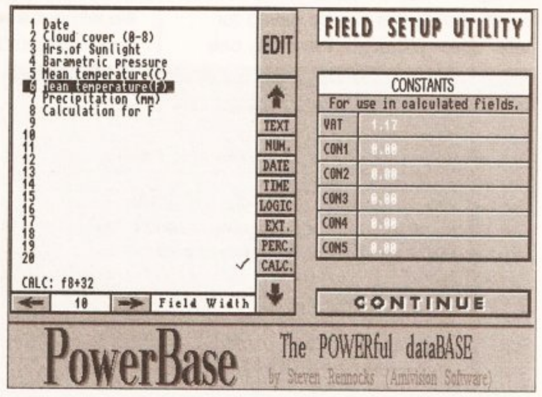
PowerBase supports a range of field types, including numeric, logical (T/F/Y/N) and imported ASCII or IFF.

GETTING STARTED

Operation of any database application goes through three distinct stages: design, data input and data output. Analysis of a new piece of software – especially one aimed at beginners – starts with putting the manual to one side, leaping in with both feet, trying to swim. Result? *PowerBase* is a breeze to use – the VCR-type control panel has been borrowed from *Superbase* and is very simple to learn. Interestingly, even in such a basic application, database files can be password-protected on three levels, none of them preventing read access.

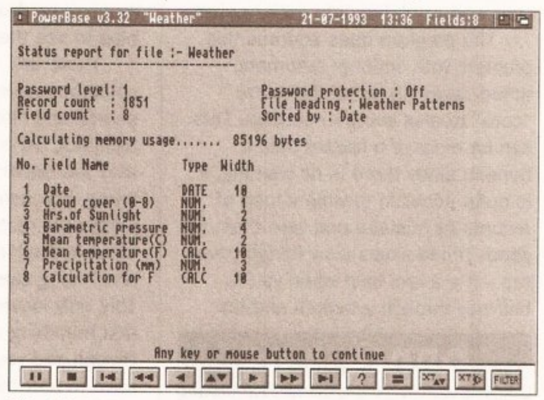
You lay out a new file from a custom screen limiting you to a maximum of 20 fields per record. More would have been nice, but simple databases rarely need more than ten anyway. Supported field types are: Text (60 characters max); Numeric; Date; Time; Percentage; Logical (T/F/Y/N); Calculation (*/+- only) and External (ASCII text or IFF).

The design of this section strays a little from the norm in that it is possible to change the name of any field at any time. This makes it beginner-friendly (beginners invariably use meaningless fieldnames like NAME1) but lacks the rigidity of the conventional approach.



Setting up your field names is simple in PowerBase – like other functions, it's all made easy for you.

This has a side effect later in that fields are referred to by name on displays, but field number – F1...20 – in calculations. Is this a bad practice? It's like comparing BASIC to C – who cares so long as it does the job adequately? Just as hardened programmers sneer at BASIC, so database experts will scoff at this aspect. It's not a problem, but will make the upgrade path difficult if Amivision ever decide to make the program free-form (field limit set by RAM).



The Status screen gives you a handy statistical overview of your data and general settings.

NEED INPUT...

Traditionally this is the dull bit, especially if you have to sit down at a terminal and enter huge amounts

BUYING A DATABASE

Buying any piece of professional software is a difficult decision – good ones are rarely cheap and you are not entitled to your money back if it doesn't do what you wanted!

- A database is a tool, not a toy. Ask yourself, do I have something else I can do the job with? A good spreadsheet (and even some word processors) may have all the features you need.
- What do you want to catalogue – are there a lot of items and what benefits would a database bring you? It's all very well keeping a database of compact disks or videos, but how often would you bother with it?
- How many records are you likely to store and how many fields will you need? Small databases (up to a few hundred records with up to ten fields) can be held in memory; larger ones need to be accessed from disk. Are you likely to store more than 10,000 records?
- Do you really need a mail-merge? If you only write the odd letter, such a feature is superfluous.
- Do you need statistical analysis of the data? If you're at college studying a science or in business, this could come in handy, but a database of addresses doesn't need anything fancy.
- What about relational facilities? Relational databases are powerful, but they can be tricky to use. Typically, they find uses where records share a large amount of common data and this is more for business than home applications.

POWERBASE OR, ER, POWERBASE?

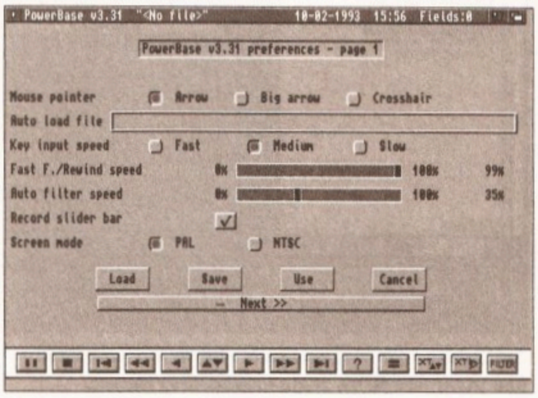
Software naming conventions have always been a favourite bugbear of mine: give it a name that sounds good – who cares if it's accurate. UGA's *PowerBase* (NOT REVIEWED HERE) is typically like calling a goldfinch "PowerBird". *UGA PowerBase 1.0* is anything but what it says – this weak flat file has a nice-looking front end and little else. *PowerBase 3.34*, subject of this review, is by Steven Rennocks (Amivision Software) and has no connection with the UGA offering except in name. Make sure you get the right one!

of data. *PowerBase* has its good and bad points here. On the up side, it has a very straightforward default entry screen and a simple, but effective, object-oriented screen designer. Nice to see that any number of forms can be saved for later use – although it is a pity one cannot be elected as the default for any database.

There are a number of features to expand the size of the database by adding blank records in batches and copying existing ones, but... it's all done in memory, so forget to hit **Save**, the Amiga goes guru – and your work vanishes into data heaven.

The program does address this problem with optional automatic timed-saves (to dump the entire "core" to disk every *x* minutes). This can be more of a hazard than a benefit: since there is no warning, it is quite possible to wipe a load of records by mistake and lose them for good! Timed-saves slow things down too – it's a real bind when you're half-way through a search and the autosave kicks in.

File handling is one area where *PowerBase* does fall down a little. Two problems come to mind: first, it is possible to load an "alien" file such as an application, text or layout file without a word of complaint – at least it doesn't crash. More worrying is the lack of an overwrite warning – it is quite possible to overwrite the wrong database without thinking. Given the price and relative complexity, these cavils are not severe – but worth consideration; and I feel sure Amivision could put them right in a matter of hours.



Setting preferences is as straightforward as just about every other procedure you can tackle in PowerBase.

GETTING OUTPUT

PowerBase, like most low-cost databases, does not maintain a separate index file in which records are sorted by some "key" – say Surname or Date. The entire file has to be sorted instead from time to time. The sort routine is fairly quick, but nothing special. Indexes give much more flexibility and it would be nice to see them in a future revision.

There are comprehensive search and filtering facilities, although they are rather linear. You can locate any record by filling in the blanks and hitting **search.** This only locates the first matching record though and you may have to sort the base to get things in expected order.

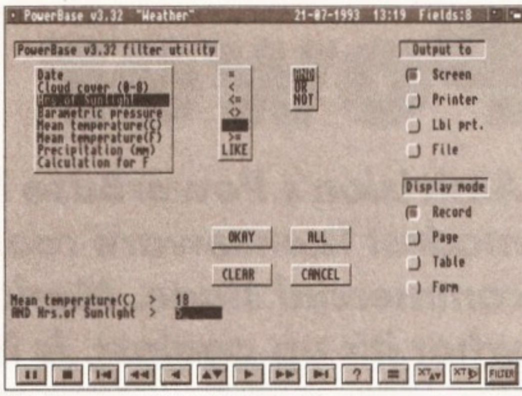
More useful is the output filtering system. This allows a group of records to be processed and sent to some output device – printer, screen or file. Several views are available from this option and the field list can be restricted too. Filter facilities enable users to specify fields according to their contents (like an automatic search). Wildcards are supported, as are comparisons for (respectively) text, dates and numeric values. A feature of *PowerBase* is that a filter is removed once the operation has been completed. Some systems keep a filter active all the time until it is switched off. While this latter is more powerful, beginners may find it confusing:

Beginner: "Where have all my records gone?"

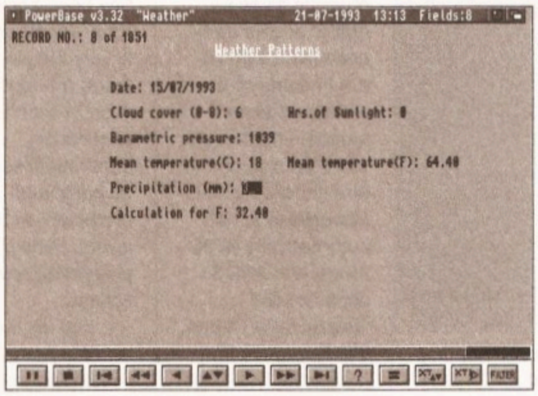
Expert: "Ah yes, they've all been filtered out!"

CONCLUSION

PowerBase is an unpretentious application that will win a lot of friends. It's fast, inexpensive, and simple to use without being too simplistic; the user-interface is clear, friendly and good for new users. Don't be misled by over-enthusiastic praise from some quarters though: it has some shortcomings (notably, limited storage and no indexes) – but you could do a lot worse. Demanding and advanced users should give it a miss and dig deeper for something more powerful and up-market; beginners need look no further. AS



Filtering your data to find the precise information you need is easy (see also the "Beginners" box below).



Editing information is effortless, and the VCR-style control panel makes it easy to move around records.

ORDER 2.05

South Hams Software feel that our review of *Order 2.03* in *Amiga Shopper* 23 was not accurate, although many of the claimed inaccuracies related to a later version not in my possession at the time. *Order 2.05* is a substantial improvement on the earlier release: gadgets are more logical; the number of fields is increased from 14 to 30; and two extra field types (time and calculation) have been added. However, many of the original criticisms remain. *Order* is still amateurish and requires more than a seemingly endless stream of upgrades to improve. The ideas are there, but the program tries to be something it isn't and is too limited to be considered a contender in the serious stakes. My original conclusions still stand. (If you want to know what they are, you can order a copy of *AS* 23 on page 108.)

BEGINNERS START HERE

What is a database?
A database is a collection of items of related information – records. An address book, for instance, is a database, as is a telephone directory. Confusingly, the term is applied to both the file of data entries (records) and the computer software that manages them.

Do I need one?
Databases are a classic computer application. They are a convenient way to store large amounts of information and retrieve it quickly at some future time – anything from telephone numbers to medical records and weather patterns. The data could be organised and accessed in various ways. For instance, telephone numbers might be listed by name (first or last) or by number. Records can be found either by name (to get the number) or by number (to get the name, for itemised billing).

Weather patterns are more tricky. Say you need to know which days last year there was less than an hour of sunshine and more than two inches of rainfall. That would mean searching out both the sunshine and rainfall figures for 365 separate days, then collating the two sets of records – maybe a few hours' work. A computer like your Amiga could do the job in less time than it takes to devise the problem.

SHOPPING LIST

PowerBase 3.34 ....£14.95
By Steven Rennocks
1 Cherrington Drive,
Great Wyley
West Midlands WS6 6NE
☎ 0922 414731

CHECKOUT POWERBASE 3.34

Features
●●●●●○○○○○
Everything the first-time user could want, with a few extras.

Documentation
●●●○○○○○○○
Amivision could do with something more professional here...

Ease of Use
●●●●●●●●○○
Breeze through it without the manual – a very intuitive interface

Speed
●●●●●●●○○○
It's memory based and will never have to do anything too demanding.

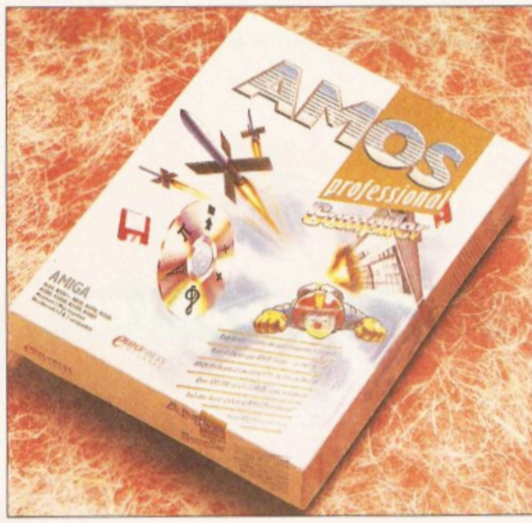
Versatility
●●●●●●○○○○
More than you might expect for the price – but it's not *Superbase*.

Value for Money
●●●●●●●●●○
Cheap, cheap, cheap! What more do you want!

Overall rating
●●●●●●●●○○
An unpretentious, entry-level database with a lot to offer occasional users.

Get your code cracking

The AMOS Pro Compiler has arrived, offering AMOS programmers an easy means of generating faster, more efficient programs. Gus Chandler tools up for speed.



Inside this box are just three disks, a 50-page user manual and a cardboard filler that occupies two-thirds of the space. Keep cutting down the forests, boys.

AMOS Pro users will be pleased to learn that the AMOS Professional Compiler is now available from Europress at a reasonable £34.99. Written by François Lionet (the creator of the AMOS language), the compiler turns AMOS programs into their machine code equivalent – code which will run much faster than its interpreted version can.

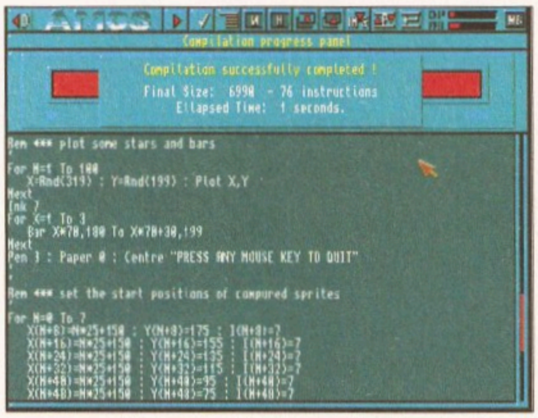
Owners of AMOS and Easy AMOS can also consider adding the compiler to their software armoury – it's fully compatible with both these subsets of the language – but would be perhaps better advised to put the money towards moving up to the full AMOS Pro language before acquiring a compiler.

An extended development from the original AMOS Compiler, this package will now handle all of the huge command set that is provide by the extremely versatile AMOS Pro language.

If you're an AMOS Pro user then the first thing you'll need to do is update your copy of AMOS Pro to the newly available version 2.0. A disk containing the upgrade is supplied with the compiler. This isn't an optional upgrade – you'll have to change over to this revised version of AMOS Pro if you want to install the compiler.

Unlike the AMOS Pro manual – which is a rather weighty and comprehensive tome – the user guide supplied with the compiler is a brief 50 pages. That's not to say that the instructions given aren't adequate for the purpose – it's very easy to use the compiler once it is installed. Many users will find that they don't even need to read some sections of the instructions. They'll find that they can compile a program simply by selecting the "Compiler" option that now exists in the user menu in AMOS Pro's Editor window. The manual explains the install procedure for hard disk owners and also gives advice to those seeking to run the package from floppies. Full details are also provided on how to invoke the compiler from the Shell and the various compile-time parameters that can be set by the user – which I'll discuss presently.

Where the manual does rather fall down is that it dedicates just three and a half pages to what it calls "troubleshooting". The reason for this lies perhaps in the fact that the AMOS Pro Compiler itself generates only a limited vocabulary of error messages – which at times can be more infuriating than helpful.



Once you call the compiler you won't have to wait very long for results – for all but the longest programs, the compilation process takes just a few seconds.

WHAT DOES IT DO?

In essence, a compiler takes a program and from it produces another program which is functionally identical to the original. The difference lies in the fact that this new program – the object program – is in machine code. This new version will run much more speedily than its interpreted parent. If you want a more detailed explanation of this process, see our discussion of the inner workings of compilers in the "beginners" panel on page 59.

We've already mentioned that you can compile programs by selecting a menu option in the AMOS Pro Editor window. You can also call up the compile in other ways. There's an icon supplied called the "Compiler Shell" – double-clicking on it brings up a GUI (that's a Graphical User Interface) from which all the features of the compiler package can be set via a series of menus and "clickable buttons". This enables you to alter and save the package's default settings.

As well as being able to invoke the compiler using the GUI of the "Compiler Shell", you can, rather confusingly, also utilise the compiler directly from the Shell – this time the AmigaDOS variety. This is done with the **APCmp** command. This command can be used with a range of optional parameters. These include options for selecting the environment under which the executable code will run – Workbench, the Shell, or the AMOS Editor. You can specify whether the compiled code should include libraries and where these are to be found. A "Long" parameter enables large programs (those with control structures that exceed 32K in length) to be compiled.

A batch option is available, which will prove useful to those with a directory full of programs that they want compiled.

HOW FAST IS IT THEN?

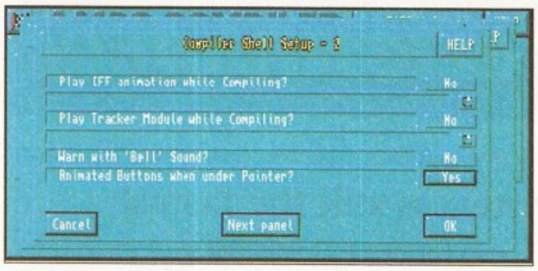
To a point that's as easy a question to answer as "how long is a piece of string?" The speed ratio between the compiled version of a program and its interpreted equivalent is primarily dependant on what sort of operations are most frequently used in the code. For example, programs that use a lot of integer maths will run substantially faster when compiled. We tested the interpreted and compiled speed of a series of integer maths routines. The speed was on average enhanced ninefold.

Compiled programs that require lots of floating point calculations will also be significantly accelerated in comparison to their interpreted counterparts. The speed advantage is not as substantial as for integer handling though – we recorded a fourfold performance increase.

If however you examine the speed increases with other operations you'll see that the results aren't as impressive. As an example we tested a simple program, consisting of just a straightforward **FOR – NEXT** loop construct and containing a **PRINT** statement that would output a string of characters to the screen. The difference between the speed of this program run under the interpreter and then run as a compiled version was negligible – less than 1%. There's a reason for this. Printing characters to the screen is handled by a number of machine code routines that are held in the operating system libraries. Both the interpreted program and its compiled equivalent call these routines to handle printing – and so this aspect of each version's performance will be the same. The small speed advantage the compiled code achieves is because the loop construct is implemented more efficiently that the interpreted program can manage. If we remove the **PRINT** command and just compare the speed differential for the "empty" loop there's a change.



The Compiler Shell front panel. From here a series of menus enables you to alter the compiler default settings to your own tastes and requirements.



One of the Compiler Shell menus. This one enables you to select the way in which sounds will be handled.

Now the compiled version runs some 50% faster. That's because in the first example most of the processing time was occupied with executing the **PRINT** command, not with performing the loop instruction.

There are some other sorts of operations where the speed at which the code runs is predominantly influenced not by whether it is interpreted or compiled, but by factors external to the processor. Input/output operations are a classic example of this. Take disk operations. The limiting factor when writing data to a disk drive or reading data from one is not the speed at which the instructions can be performed by the Amiga's processor. Instead, the speed of programs which rely heavily on disk access is constrained by both the speed at which data can be located on the disk and then the rate at which data is transferred to or from the drive.

PROBLEMS

Most sophisticated software packages usually have to go though several revisions before all of the inevitable bugs are removed. The AMOS Pro Compiler will be no exception. For example, version 2.00, reviewed here, has serious problems with double-precision maths. In some cases it gets its sums wrong – which it has to be said is a pretty disastrous failing. Luckily, this won't affect the great majority of the compiler's users – but only because few people write code that makes use of AMOS's double-precision features.

We should also report that we encountered some other problems in testing the compiler. It happily performed the compilation process on all the longer programs that we threw at it, but the compiled versions of two of these proved unstable. In both cases they "crashed out" unexpectedly. Naturally, we examined carefully the source code for both of these compiler recalcitrant routines, but couldn't identify anything that on the surface should have caused the compiler problems. It's in circumstances like these that the paucity of diagnostic messages generated by the compiler shows. Halting the task with the message "Program finished at line *n*" – the text generated when each program stopped – doesn't help greatly in tracking down the possible cause of the problem.

We contacted Europress to discuss these few shortcomings. They assure us that they are aware of the teething troubles of the package and welcome reports of any problems. Details of these are passed on to the author. Free update disks will be made available to compiler owners to fix reported bugs.

All in all the AMOS Pro Compiler is a high performance package that certainly delivers value for money. There are a couple of bugs – but that's almost inevitable with an early version of such an advanced piece of software. Given Europress's strong track record in supporting AMOS there's no doubt that these problems will be quickly resolved.

If you're serious about developing applications in the AMOS language then there's really no way you can avoid splashing out a very reasonable 35 quid for the compiler – it's a must. AS

SHOPPING LIST

AMOS Professional Compiler £34.99

From: Europress Software
Europa House,
Adlington Park,
Macclesfield SK10 4NP
☎ 0625 859333

CHECKOUT AMOS COMPILER

Features
●●●●●●●●○○
The GUI gives access to a wide range of parameters.

Documentation
●●●●●●○○○○
Adequate, but disappointingly brief. A longer chapter on troubleshooting would have been welcome.

Ease of Use
●●●●●●●●○○
You can compile programs with a single menu command.

Performance
●●●●●●●●●○
Very good. The compiler will substantial enhance the speed of your programs.

Value for Money
●●●●●●●●●○
Excellent. A £35 price tag is very reasonable.

Overall rating
●●●●●●●●○○
A powerful addition to the AMOS suite.

BEGINNERS BEGINNERS START HERE BEGINNERS

Not sure what a compiler is, or what jargon such as "tokens", "source code" or "object code" actually means? Read on and all will become clear.

We're going to explain this in several stages. First we'll look at what happens to a program line when it is typed into the interpreter's editor. Then we'll see how the interpreter deals with the program when you want to run it. Then we'll go on to see now a compiler functions in a different manner – examining the whole program and then converting it into its machine code equivalent, which can then be run directly on the machine without any further need to invoke the interpreter or compiler packages.

When you enter a program line into the AMOS editor and press [Return], the line is turned into what is known as its *tokenised* form, rather than being stored in ASCII – the conventional format for text. These tokens are numerical codes that represent the different keywords, variables and parameters contained in the AMOS Pro instruction set. There are two reason for saving your program in this way. First, it means that the interpreter can run more quickly because it doesn't have to "look up" items such as keywords and variables in its internal tables each time – the token code provides a direct reference to them. A secondary advantage is that tokenised files occupy significantly less space than their ASCII equivalents.

So how does the interpreter process this tokenised version of a program? Once you select the run option from the menu, the interpreter starts to execute your program. It does this by examining your instructions in sequence. Each time a line has to be executed the interpreter takes the tokenised version and translates this into machine code. It then executes these machine code instructions before moving on to the next line. What this actually means is that the interpreter has to perform this process on each line each time it comes up for processing – and this holds true whether the program needs to execute a line once or a hundred thousand times. You should be able to see that therefore a significant amount of time will be absorbed by the interpreter having to repeat this translation process on every occasion that a line has to be executed.

Don't get the impression from all this that an interpreter isn't an invaluable tool. For all but the most trivial of programs you'll find that the easiest way to develop and debug them is under the interpreter. The AMOS Pro interpreter offer a powerful "single-step" facility to assist in just this. Single-stepping a program – in conjunction with the monitor option – enables the programmer to temporarily halt the program after each AMOS instruction has been executed. This permits the programmer to inspect the values held in the program's different variables, and so check that the code is performing in the way it has been designed to perform.

So what happens when you come to compile a program? To the user the most obvious difference is that the compiled program will run significantly faster than its interpreted counterpart. Why? Well, in essence, what the compiler does is examine the entire program – a process known in the jargon as "parsing" – and output another version of it. This is a complete machine code equivalent of the original tokenised AMOS code. Once this compilation process has been performed, the machine code version can then be run directly, rather than each line having to be translated and re-translated each time it is encountered – which is how the interpreter functions.

Once you've compiled a program you don't need to have the compiler resident on the machine when you come to use the program. However, compiled programs frequently need to access what are called libraries. These are collections of machine code routines that have been produced for handling frequently-used system functions – such as writing a character to the screen. In a high-level language – like AMOS Pro – this appears as just a simple command, but at the machine code level it's actual quite a complicated operation that requires many instructions. Rather that insert this whole block of instructions in the compiled program whenever a print operation is encountered, the compiler will instead insert a call to the appropriate library routine.

There are a number of terms used to describe interpreted and compiled programs. "Source code" is the name given to the original program text, and this is the sort of file that an interpreter will operate on. "Object code" is the output file that is generated by the compiler – one which can be directly run by the system without the need for the compiler software to be resident.

Protext 6 - *A Winning Performance*



Some highlights of Protext 6

Styles
Styles let you make flexible use of printer fonts and effects. You can change a font throughout a document with a single operation.

Document Layout
An easy to use dialogue lets you lay out your page precisely as you want using inches or cm for the page length, margins and tabs.

Graphics
Graphic images may be imported into a Protext document. Supports IMG, PCX, GIF and IFF. You can select any resolution and scale the image. Dot matrix, inkjet and laser printers.

Printers
Protext's unrivalled understanding of printers gives you the highest quality printing at the highest possible speed. Using a printer's built in fonts enables Protext to print pages in seconds rather than the minutes taken by some programs.

Protext is still the fastest
- Fastest at editing.
- Fastest at spell checking.
- Fastest at printing.

Protext still has the best printer support
- Hundreds of printers supported
- PostScript driver included *NEW*
- Scalable font support *NEW*
- Colour printing *NEW*
- Automatic line spacing *NEW*

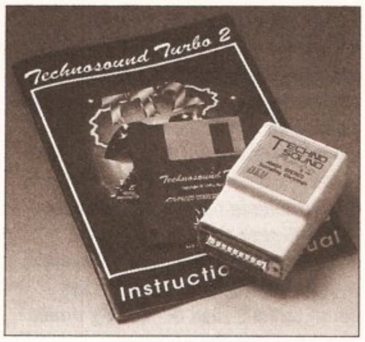
Protext still has the most advanced features including:
- Styles *NEW*
- Graphics import *NEW*
- Spelling checker
- Thesaurus
- Hyphenation
- Document analysis
- Glossary *NEW*
- Footnotes
- Widows and orphans
- Index and contents
- Addition of numbers
- File sorting
- Mail merge
- Programming language
- Macro editor *NEW*
- Dictionary editor *NEW*

WorkBench New Look
- New WB menus, requesters, gadgets
- Screen requester to select mode *NEW*
- ARexx interface *NEW*

The list price of Protext 6 is £152.75 but you can order direct today for just **£99** inclusive. For any Amiga with 1Mb memory and WB 2.0 or later. Phone us today and we will send you a usable demo version and a full specification, absolutely free. Upgrade offers available - please call us for the current price.

Arnor Ltd (AS), 611 Lincoln Road, Peterborough, PE1 3HA Tel: 0733 68909 (24 hr), Fax: 0733 67299

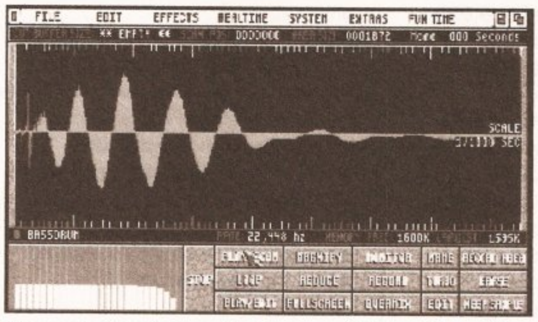
Turbo sampler



If you're looking for a sampling package on the Amiga, you're already spoilt for choice. Tim Tucker fires up the latest contender, Technosound Turbo 2.

There have been many programs released which take advantage of the Amiga's internal sound capabilities. They usually take the form of combination software and hardware samplers, which enable you to make digital recordings of audio, edit the waveforms, and save them to disk for use in other programs. Technosound Turbo is one of the more popular samplers for the Amiga, thanks mainly to its price and ease of use, and now New Dimensions have released an upgraded and improved version in the shape of Technosound Turbo 2.

For your 50 quid you get a hardware sampling cartridge which plugs into the parallel port on the Amiga, and a disk containing the sampling software. The sampling cartridge has two RCA stereo phono plug inputs, the type normally found on home hi-fi's, and you're also supplied with a stereo phono-to-mini-jack audio lead for connecting the sampler to a sound source. It is recommended that you use the headphone output from a Walkman or portable CD player as a source for sampling, but you can connect it up to an amplifier with the use of an adaptor, available from most high street Tandy's stores. You can also buy the sampling software on its own – it is compatible with most hardware samplers available for the Amiga.

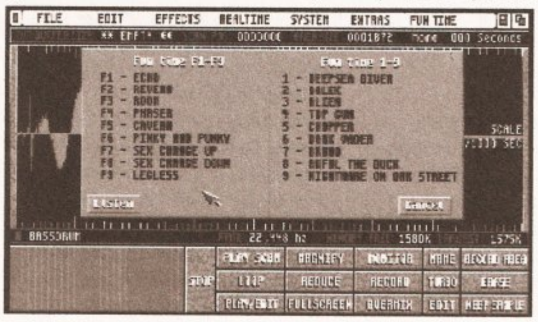


The control system on Technosound Turbo 2 is really easy to get used to, with buttons and menus on board.

Load up the program and, after a particularly attractive title screen, you find yourself faced with the program's main screen. Users of original Technosound Turbo won't recognise this successor – the whole thing has been completely redesigned, and much improved too. The screen doesn't look at all cluttered or confusing, and all the commands and controls are found in logical and convenient places. The most commonly used controls, such as **Record, Play Sample** and **Loop,** are accessed by clicking on buttons in the panel beneath the waveform display, while the edit commands, effects, file handling and so on are in pull-down menus. It's obvious that a lot of thought has gone into how the controls are laid out, and it doesn't take long to get used to where everything is and feel comfortable working with the program.

You do all the recording and editing of samples from the main screen, and before you record a sound you can monitor the input to hear how the sample will come out. If the sound quality's not up to your requirements, you can always increase the resolution. The maximum sampling rate is 50,669Hz, although the higher rates are only possible on an Amiga with a 68020 processor or above (for example, the A1200 and A3000). However, sample rates of 20kHz are more than adequate for most applications, and the sound quality on this package is such that you can achieve very good results at around 12kHz. This is important, because the lower the sampling resolution, the less memory the sample takes up, and it's often important to be able to store plenty of samples in memory.

Once you've checked the quality and set the input level correctly, you're ready to take a sample. This couldn't be simpler: just click on **Record** in the control panel. You're given the choice of instant record, which starts as soon as you click the button, or Record + Vox, which waits until it gets a signal before it starts sampling. This latter option is useful when you don't want a gap before the sample, and can save you a lot of time looking for the exact start point. However, it does tend to clip the beginning of the sample slightly, because of the delay between it recognising that a sound is being played and snapping into action.

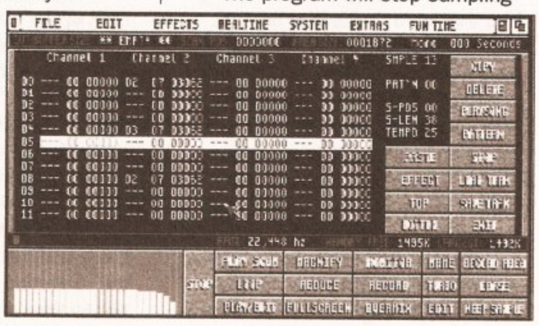


It's fun time! In fact the Fun Time menu is not as trivial as it sounds – there are some useful effects.

The program will stop sampling when it's reached the limits of the Amiga's memory or when you press the right mouse button, whichever comes sooner. As soon as you've finished recording, the sample is displayed in the waveform edit window above the control panel, ready for editing. This is where the real power of the software comes in, because you can use the various tools in the program to make extensive changes to the sample.

The great thing about this software is that it makes the whole editing process a lot easier through its easy-to-use and intuitive control system. To hear the samples and mark out editing regions you place two pointers, left and right, on the waveform display. This is very easy to do – just click with the left and right mouse buttons respectively – and it makes it very quick to isolate parts of the sample for editing.

The most obvious editing commands are of the cut, copy and paste variety. These enable you to trim the sample of all the sounds you don't need and just work with the bit you wanted. However, there's a lot more you can do with these controls to make more creative samples, such as combine two or more samples together, insert part of one sample into the middle of another, and even mix one sample over another so that they play simultaneously.



Built-in trackers are pretty standard in Amiga samplers these days, and the one here certainly does the job.

All this manipulation makes for a great deal of power over the sounds you sample, but as if that wasn't enough, you can also add special effects. Some of the effects are variable, which enables you to stipulate certain parameters, such as the rate of Delay in milliseconds. The standard of the effects is reasonably high, but to give the sound the desired effect, the program re-samples the original, which results in a lower quality sample. While it will never take the place of a dedicated effects unit, the results are certainly usable, and it's a great feature to have on board.

Of course you can save samples

HD USERS

Naturally enough, the Technosound Turbo 2 software can be installed on hard drive, but there's another feature of the program which hard drive users will welcome. This is the ability to record samples directly to hard disk, which goes a long way towards overcoming the memory restrictions on samples. As a result, with enough hard disk space, you can create huge samples, and even make whole digital recordings. The quality of the samples would depend on your system – most notably the processor speed, Kickstart version and hard disk access times – but New Dimensions reckon that an A500 running Kickstart 1.3 and linked to an A590 hard drive could sustain a sample rate of 12kHz, and an A1200 with a standard IDE hard drive could sample up to 40kHz.

to disk, but the program also features a very handy Edit List. This enables you to keep more than one sample in memory, which makes it a lot quicker to call up different samples for editing at the click of a button. It also makes it possible to make multiple copies of a sample with different edits, so you can quickly compare different versions without having to sit through the usual tedious disk accessing times. You can save the samples individually to disk, or save the entire contents of the Edit List as a Set. This is very useful if you want to keep certain samples together, especially when using the tracker section of the program.

The samples created in Technosound Turbo 2 can be exported for use in many sequencer and tracker programs, but the program also includes its own built-in tracker. This enables you to sequence samples together to form complete pieces of music, without ever leaving the program. Anyone who's used tracker programs (such as... oh, say, *OctaMED)* will soon get to grips with the controls, because they follow the standard tracker layout. Its not as powerful as a dedicated tracker, but there's no reason why you can't put together fairly complex pieces with it.

Another useful add-on is the MIDI module. This enables you to play the samples residing in memory (in the Edit List) from an external MIDI keyboard, for which you'll need a MIDI interface connected to the serial port on your Amiga. This way you can treat the Amiga as a sound source for playing sounds from a keyboard.

As if being a sampler, sample sequencer and tone module wasn't enough, Technosound Turbo 2 can also make your Amiga behave as a sound processor. Through the use of various programmable and pre-set effects, you can manipulate audio signals in real time. There is a broad range of effects available in the **Real-time** menu, all with their own parameter controls, and you can save the parameters in up to 999 different pre-sets per effect. This enables you to access your own

SPECIAL EFFECTS

Technosound Turbo 2 features the following effects:

THE EFFECTS MENU

You can edit existing samples with the following effects, but you can't hear the result until the edit has been made.

Variable Delay – Range 1–9,999 milliseconds; Variable Echo – Range 1–9,999 milliseconds; Variable Synthesis; Maximise; Low Pass Filter; Amplify; Soften; Fade In; Fade Out; Compress

THE REAL-TIME MENU

These effects only apply to sounds coming into the Amiga in real time, and can't be recorded by the program.

Phaser; Echo; Delay; Sweep; Ramp; Synthesis; Pitch Up; Pitch Down

THE FUNTIME MENU

These are some more real-time effects, but this time with an emphasis on novelty.

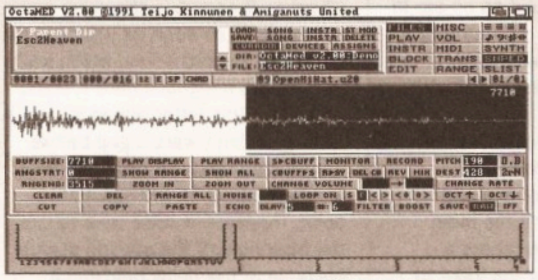
Echo; Reverb; Room; Phaser; Cavern; Pinky and Punky; Sex Change Up; Sex Change Down; Legless; Deepsea Diver; Dalek; Alien; Top Gun; Chopper; Dark Vader; Bruno; Awful the Duck; Nightmare on Oak Street

SAMPLE EDITING IN OCTAMED

OctaMED is an excellent tracker program, but there are other sides to it as well, and one of the things that make it so powerful is the integrated nature of the sub-programs within it. Last month we saw how the notation editor can help enormously by showing your music in standard notation form, and this month we'll look at another useful sub-program, the sample editor.

OctaMED uses IFF samples to create sounds. But what if the samples you're using aren't quite what you're looking for? What if they require some tweaking perhaps? With most tracker programs, you'd need to have a completely separate sample editing program to alter any of the characteristics of the samples. Then you'd have to multi-task the sample editor with the tracker, and constantly swap files between the two programs. Or even worse, as is often the case with two different Amiga programs which use the Amiga's sound capabilities, you mightn't be able to multi-task them at all. This would then necessitate you having to quit the tracker, load up the sample editor, load the sample, do the editing, quit the sample editor, load the tracker again, load the edited sample, and see if the editing had the desired effect in the context of your song. Phew. And if it didn't, you'd have to keep repeating the process until you got what you wanted. If you hadn't given up before then.

Thus you can see how useful the sample editing features on *OctaMED* are. Not only can you access the editor with a click of a button, but you can work directly on the samples you're using, and hear the results immediately in the right context. To fully comprehend the capabilities, it's a good idea to see some of the functions in action. Load up the demo song file supplied with *OctaMED* called **Esc2Heaven,** and flick through the sample list until the current sample is **OpenHiHat.u20.** Let's assume that the sound is not quite to our liking, and that we'd prefer it to be a bit shorter and more crisp. Time to call up the sample editor.



You'll never have to leave OctaMED to edit samples. The built-in sample editor does the job, no problem.

Click on **SMPED** in the top right hand panel and you'll see the standard block editor display of *OctaMED* replaced with the sample editor. In the middle of the display is a graphic representation of the hi-hat sample, and underneath it the controls which enable you to play and make changes to the waveform. Click on the button marked **PLAY DISPLAY,** just below the waveform window, just to hear the sample play. You'll notice that a red cursor moves across the window as the sample plays, giving you an indication of which part of the sound is playing. This is handy if you're trying to identify a certain part of the sample for editing, for example. You can still play the sample from the Amiga keyboard as usual. Press the **P** key on the keyboard to hear the sample fairly quickly, then press the **Z** key to hear it played agonisingly slowly.

Click on **Play Display** again, and you'll notice that the sample plays a bit too slowly. This is because the sample editor is playing C-2 as a reference pitch, which is too low for this particular instrument. The reference pitch is displayed in the pitch gadget to the right of the screen, under the waveform window, and it currently shows the number 428 to indicate the note C-2. You can edit the number by simply clicking in the box and entering a new value – for example, entering the number 214 would make the sample play at exactly twice the rate. However, there is a quicker way to re-define the reference pitch. Click in the grey box to the right of the number (it currently reads **2rN)** and keep the left mouse button held down. Now pressing different keys on the Amiga keyboard changes the pitch to the respective value. For now press the **O** key and let go of the mouse button, and the number changes to 190. Click on **Play Display** now and the sample plays at a much more acceptable rate.

You can get a closer look at smaller parts of the sample by using the **Zoom In** control. You'll notice that the waveform changes to show the magnified part of the sample and the red bar along the bottom of the wave window shrinks to indicate the part of the wave being looked at. You can keep zooming as far as you want to go, and you can scroll to see the rest of the sample not on view, using the left and right cursor keys on the Amiga keyboard. To bring the wave up to its normal size, either use the **Zoom Out** control or click on **Show All.**

This is fine for getting into the guts of a sample, but often you'll want to see a specific area of the wave for editing. First you need to select a range, which you do by clicking in the wave window with the right mouse button and drag-selecting an area of the sample. To de-select the area, simply click with the right mouse button again. To hear just the part of the sample that you've selected, click on **Play Range.** To compare a selected part of a wave and the original, simply click on **Play Range** and **Play Display** respectively.

favourite effects settings every time you use the program. There is another source of real-time effects in the **Funtime** menu, which features novelty effects such as Dalek voice, but these are all pre-set and can't be adjusted.

The uses for the real-time effects are actually quite limited, because you can't sample the sounds while adding effects at the same time. You could however record the effected sounds to an external tape machine – for example you could sing into a mic, or play a guitar, then use the program to alter the sound and record the output from the Amiga to tape. Another use might be to audition effects in real time before editing a sample with one of the effects in the edit menu. The programmers don't appear to have thought of this though, because the delay effect, for example, doesn't use milliseconds as a parameter in the real-time effects section, whereas it does in the Edit menu. This means that if you want to add delay to a sample, you're still in the dark as to what the result will be until after the sample has been altered. This could mean you're continually making edits to the original wave form until the result sounds right. It would have been a lot quicker if you could see from the real-time effects what setting you needed.

New Dimensions have certainly packed a lot into this program, and while the tracker and real-time effects don't stand up next to dedicated equipment, they're certainly a genuine bonus. More importantly, though, Technosound Turbo 2 succeeds in being a very usable and high-quality sound sampler, capable of producing some stunning results. The way the controls have been designed makes everything extremely easy and quick to use too, which is a major benefit over many of its competitors. Anyone looking for a sound sampling system on their Amiga would have difficulty finding a better choice than this. **AS**

SHOPPING LIST

Techosound Turbo 2 .... £49.99
Upgrade from version 1, £15 plus £1 postage and packing
Software only £29.99

From: New Dimensions, Brooklands House, Brynygwyn, Raglan, Gwent, NP5 2AA
☎ 0291 690933/690901

CHECKOUT
Technosound Turbo 2

Features
●●●●●●●●○○
All the facilities you could want, plus some real bonus extras like the effects and the tracker module.

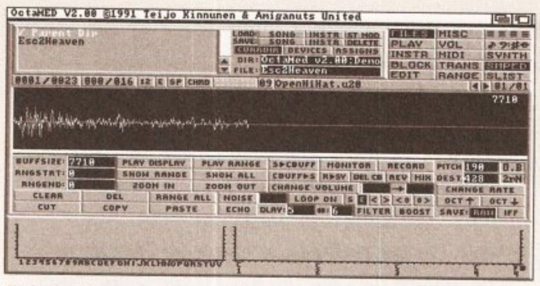
Documentation
●●●●●●●●○○
The manual makes for an informative – and, even more importantly, an easily understandable – read.

Ease of Use
●●●●●●●●●○
It shouldn't take anyone, even a novice, too long to get to grips with this program. Very well laid out.

Value for Money
●●●●●●●○○○
A lot is on offer here at a good price, though there are cheaper sampling packages available.

Overall rating
●●●●●●●●○○
A great sampling package, which would suit the first-time buyer as well as anyone looking to get better things out of their Amiga.

To the left of the control panel are three gadgets marked **BUFFSIZE, RNGSTRT,** and **RNGEND.** The **BUFFSIZE** gadget indicates the overall length of the sample, which is also displayed in red in the upper right-hand corner of the waveform window. **RNGSTRT** and **RNGEND** indicate the start and end points of the range that you've selected. Once you've selected a range, you can edit either of these values by typing in new values, and you'll see the selection on the wave display change to reflect it. This is extremely handy, because it enables you to really fine-tune a selected range for total accuracy.



This is the sample waveform after the end's been lopped off it. Thus you can just save what you want.

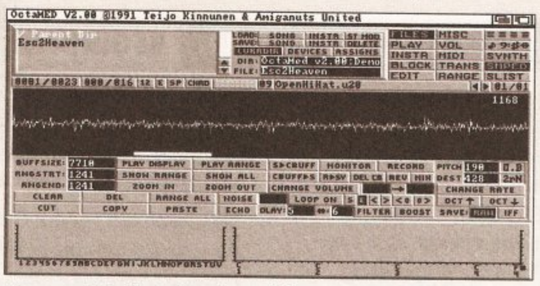
For this particular sample, we want to make it more crisp, and this will require playing only the first part of the sample. Using the right mouse button, select roughly the first half of the sample, with a numeric range from 0 to about 3,500. Compare the sounds of the selected part and the original using the **Play Display** and **Play Range** buttons. The selected part of the sample is the kind of effect we're looking for.

Of course, playing the sample from the keyboard still plays the entire sample, so we need to make an edit to the waveform to make the change permanent. This is simple: first click on **CUT** in the control panel below the waveform. This makes a copy of the selected part of the sample in a separate buffer, and deletes it from the waveform. What we're left with is the piece of the sample we didn't want, so to get rid of that, select the entire remaining sample (clicking on **RANGE ALL** is the quickest way) and then click on **CLEAR.** Now click on **PASTE** to place the contents of the buffer back into the wave display, and voilà, the hi-hat sample now plays with a more clipped sound.

It's a good idea to ensure that you've saved the original sample before you make any changes to it, and also to save the edited version under a different name so that you can always go back to the original if you want to. Don't forget, different sounds have different effects depending on their context, and you may find you prefer a longer hi-hat for a slower song, for instance.

With the controls at your disposal, you can create some really interesting hybrid sounds, by for example cutting a portion of a sound from one sample and pasting it into the middle of another. Also, you can use the **REV** gadget to reverse the range. (You must select a part of the sample first for this to work.) For an obvious example, load back in the original hi-hat sample and select the entire wave. Click on **Reverse** and listen to the resulting waveform. Sergeant Pepper anyone?

There's one more editing operation worth looking at here, and that's the mix function, with which you can create some interesting effects. First, bring up the original hi-hat waveform, and click on **S>CBUFF.** This copies the entire sample to the copy buffer, without you needing to select the range. Now bring up the Bass Drum sample and click on **MIX.** After a few seconds the copied sample is mixed in with the Bass Drum, creating a good impression of the New Order "Blue Monday" style bass drum sound.



You can join together two different sections of samples, or mix one waveform on top of another.

You can actually use this feature to help free up sample space in the tracker program. For example, if you have constant hi-hats in a song, you can save a voice when the hi-hat and snare strike simultaneously. Simply **MIX** a copy of the hi-hat sound over the snare drum sample, and then trigger the new sample on its own for the snare part. This saves playing the two separate samples simultaneously, and frees up a channel for another instrument.

Using a similar technique, you could record the entire drum part on one track, with different combinations of mixed percussion samples, ensuring that you never have to use more than one channel to play it. This may sound a bit stingy, but it's careful planning and tricks like this which enable you to get more out of a tracker.

There's even more to the sample editor program than we can fit in here, so check out the disk documentation if you want some serious control over your samples. If you have a sampling cartridge, you can also sample sounds directly into the sample editor. From sampling a sound, to editing it and integrating it into a piece of music, it can all be done within *OctaMED!*

SAILING THROUGH C

Toby Simpson shows how to add windows to your programs to spruce them up.

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

After last month's work we now have a basic text-based address book working from the Shell. This month we're going to look at how the Amiga opens and uses windows, screens and gadgets so that next month we can improve the look of our address book. All the code is going to be compatible with Workbench 1.3 and above.

In general use, the Amiga's display is made up of a number of separate screens with windows on them. Each screen can have a different palette, display resolution and display attributes, but every window on a screen must use that screen's display type. The Amiga's operating system takes care of ensuring that all of your screens live in peace and harmony together.

For our address book, we're going to open a window on the Workbench screen, containing a number of boxes for us to type data into and some buttons to press to make things happen. These boxes and buttons are called "Gadgets".

So, how do we open a window then? First we must declare and fill in a **NewWindow** structure. This structure contains information about what size the window should be, what it should look like and how it should behave. Here's an example:

```
struct NewWindow testwindow =
  {
  0,0, /* Top left position
    of window. In this case, 0,0 */
  320,100, /* Width and height
                        of window. */
  0,1, /* Block and detail
pens. (Ignored if you have
                   2.04 or above) */
  NULL, /* IDCMP flags. We'll
     talk about these in a while */
  SMART_REFRESH |
   ACTIVATE |
   WINDOWCLOSE |
   WINDOWSIZING |
   WINDOWDRAG |
   WINDOWDEPTH, /* Flags. This
 lot says our window will
    activate itself on opening,
    have a close gadget and sizing
      gadget, be draggable and
      have the standard depth
      gadgets */
      NULL, /* Pointer to first
      gadget. We have none on
      this window */
      NULL, /* Ignore this one */
     (UBYTE *)"Our window title!",
  /* Self explanatory I hope! */
  NULL, NULL,
  32,32, /* Window minimum size */
  640,200, /* And maximum */
  WBENCHSCREEN  /* Open on the
workbench screen */
  };
```

Phew. What a complex beast! So, now we have our **NewWindow** structure, what do we do with it? Well, we pass it to the library function **OpenWindow**. **OpenWindow** tries to open our window, and if it succeeds it returns us a pointer to a **Window** structure, or **NULL** if it fails. So, in order to open our window we'll have to declare ourselves a variable which is of type "pointer to a window structure". We do this as we'd define any other pointer:

```
struct Window *our_window = NULL;
```

This gives us a pointer called **our_window** and sets it to **NULL** (meaning that it points to nothing) to start with. Opening this window should now be as easy as this:

```
if (!(our_window = ▼☛
        OpenWindow(&test_window)))
  {
  printf("Couldn't open ▼☛
                      window.\n");
  return;
  }
```

This just opens the window, and in the same line says that if the result was 0, print a string saying that the window could not be opened.

We can close it when we're finished by simply saying:

```
CloseWindow(our_window);
```

Every window has a thing called an IDCMP, standing for Intuition Direct Communications Message Port. It's a message port; other tasks can send things to it for you to pick up. It enables Intuition to tell you that things have happened, for example "The user has clicked on your close gadget". You can then act on these events accordingly. There are a number of message types, and you can tell Intuition which of them you're interested in. For our example, we're only interested in one, **CLOSEWINDOW**. This one is sent to us every time the user tries to close our window. We need to now make a small change to our **NewWindow** structure above. Where I've said `IDCMP Flags, we'll talk about`

BEGINNERS **BEGINNERS START HERE** BEGINNERS

What is C?

C is the programming language used to write much of the Amiga's operating system, as well as many of the serious commercial programs available for the Amiga. It enables the programmer to access the system at a low level, making it ideal for writing operating system and utility code. What's more, its abilities to group simple elements into larger, more complex objects that can be manipulated en bloc make it ideal for data-handling uses. It is a compiled program, which means that it is speedy and memory-efficient.

What is a compiler?

A compiler is a program that will translate your C programs into machine code, the language that is understandable to the Amiga's central processor. Compilers translate a program wholesale; once the translation is complete, the finished program will run independently of the compiler. The other kind of translation is performed by an interpreter, which translates each line of a program as it is executed, one line at a time, and must always be present during execution.

So where can I get a C compiler?

All of the programs in this series are tested with DICE, a shareware package available on Fred Fish disk 491 (see the public domain directory on page 102 for suppliers). DICE will give you everything you need to get started in C, including an editor for entering your programs, a compiler for converting them into machine code, and a linker for linking your programs with any essential system libraries.

These libraries enable you to call on the Amiga's resources – facilities to open screens and windows, present the user with requesters and so on – without having to write your own code to do so. They contain code pre-written by Commodore, and to use them you need to get hold of Commodore's Include files. You can get these in two ways. The first is to register DICE, which involves you sending $50 to the author (you'll find details on how to do this in the file register.doc supplied with DICE). The second is to ask Commodore directly.

What are the Includes, and how do I get them?

The Include files are the pre-written C programs that provide the necessary links to the libraries contained within the Amiga's operating system. You can get them from Commodore by sending them a cheque for £25 made payable to Commodore Business Machines (UK) Ltd; include a request for the Native Developer's Toolkit, and send the lot off to: Sharon McGuffie, Commodore Business Machines (UK), Commodore House, The Switchback, Gardener Road, Maidenhead, Berks. SL6 7XA.

As well as the Include files, you'll receive a number of programs that will help you in developing programs and tracking down any mistakes that you make on your way.

GADGETS MADE EASY

As you've probably realised, typing in some of those long-winded structures can be a lot of hard work. And even worse, when you're dealing with lots of windows and lots of gadgets, arranging things and getting the numbers right can be a total nightmare. Wouldn't it be real nice if you could lay out windows, screens and gadgets on the screen the way you want them, and get your Amiga to write the program to handle them itself? Well, it can. There's a public domain program called *GadToolBox* which does this for you. Commodore also supply such a program, called *ToolMaker*. For a current price of *ToolMaker* you can phone CATS (Commodore Amiga Technical Support) in the USA on ☎ 0101 215 431 9180. They take credit cards. *ToolMaker* is for Workbench 2.04 and above.

`these later`, change the `NULL` to `CLOSEWINDOW`.

Now we get some information out of our newly-opened window structure about our message port. We're after something called the "Signal Bit". Each task running has up to 32 signal bits. Other tasks cause these little flags to become set, and you can wait for this to happen. When you open a window, Intuition allocates one signal bit. If we identify which this is, we can wait for it to become set, and when it does we know that some external event has happened:

```
signalmask = 1L << our_☛
      window->UserPort->mp_SigBit;
```

This constructs a mask of signal bits in which we're interested – in this case, just the one. The Amiga routine which waits for signals is called **Wait**. It expects to be passed a long word, 32 binary bits, with a bit set for each signal we want to hear from. The `1L<<` section in the command above turns the signal number into this mask for passing to **Wait**. We can now do this:

```
signals = Wait(signalmask);
```

When this routine returns, a signal has been set. In this case, there is only the one, **CLOSEWINDOW**. We receive this message, reply to it, then and quit:

```
imessage = (struct Intui☛
Message *)GetMsg(our_window-☛
                        >UserPort);
if (imessage->Class == ▼☛
                      CLOSEWINDOW)
  {
/* We can now quit our program */
  }
ReplyMsg((struct Message ▼☛
                      *)imessage);
```

Lets glue this lot together into the example program in the box below. Keep this safe, because we'll be using lots of it next month.

Now we're going to put in some gadgets. Our window already has some gadgets, automatically created and handled by Intuition – a close gadget, a sizing gadget, a depth gadget, and a drag bar. Creating our own though is a little harder than specifying a few flags in the **NewWindow** structure! There are only two types of gadget we're going to be creating: **BOOLEAN** gadgets and **STRING** gadgets. **BOOLEAN** ones will be used to move forwards and backwards between records, and **STRING** ones to both display record information and enable a user to edit record information.

We need to put together a whole list of **Gadget** structures. Once we've set them up, we can include them in our **NewWindow** structure. (See the line in the listing which says `pointer to first gadget.`) A gadget structure looks this:

```
struct Gadget a_string_gadget =
  {
  &next_gadget, /* Pointer to next
gadget */
  10,10,  /* Hit box, start */
  100,20, /* Hit box, end */
  NULL, /* Flags */
  RELVERIFY,  /* Gadget flags */
  STRGADGET, /* Type of gadget */
  (APTR)&border, /* Gadget
rendering */
  NULL, NULL, NULL,
  (APTR)&string_special, /* Pointer
to special information (See below)
*/
  1, /* Unique gadget ID number */
  NULL /* User information (You can
store something here) */
  };
```

And every string gadget requires one of these little structures to tell it a little about the string entry:

```
struct StringInfo string_special =
  {
  buffer_for_string, /* Buffer to
store entered string */
  undo_buffer, /* Optional undo
buffer */
  0,
  25,  /* Maximum characters to
allow */
  0,0,0,0,0,0,0,0, /* Various
intuition stuff we set to zero */
  NULL /* Optional alternate keymap
*/
  };
```

Ten or so of these means a lot of typing. Next month we'll use some loops to create these quickly. Once we've created our gadget list, we just point to it in our **NewWindow** structure and we're away.

You could try getting the above string gadget incorporated in this month's example program. By adding a couple of new **IDCMP** message flags, **GADGETUP** and **GADGETDOWN**, you should be able to detect when the user has selected it, or pressed **[Return]** after having entered a string. AS

LISTING: HOW TO OPEN A WINDOW AND WAIT FOR AN INPUT FROM THE MOUSE

```
/* C Programming, example of opening a window
 and waiting for something to happen.
 Type this in as "window.c"
 To compile using DICE, type:
 dcc window.c -o window.x
 To run, type "window.x" */
 /* Any include files we'll be needing */
 #include <exec/types.h>
 #include <intuition/intuition.h>
 #include <dos/dos.h>
 #include <proto/all.h>
 #include <stdlib.h>
 #include <stdio.h>
 /* Function prototypes */
 void cleanexit(int return_value);
 /* Our newwindow structure */
 struct NewWindow test_window =
  {
  0,0, /* Top left position of window. In this
case, 0,0 */
  320,100, /* Width and height of window. */
  0,1, /* Block and detail pens. (Ignored if
you have 2.04 or above) */
  CLOSEWINDOW, /* IDCMP flags */
  SMART_REFRESH |
   ACTIVATE |
   WINDOWCLOSE |
   WINDOWSIZING |
   WINDOWDRAG |
   WINDOWDEPTH, /* Flags. This lot says our
window will activate itself on opening, have
a close gadget, a sizing gadget, be draggable
and have the standard depth gadgets */
  NULL, /* Pointer to first gadget. We have
none on this window */
  NULL, /* Ignore this one */
  (UBYTE *)"Our window title!",       /* Self
explanatory I hope! */
   NULL, NULL,
   64,64, /* Windows minimum size */
   640,200, /* And maximum */
   WBENCHSCREEN  /* Open on the workbench
screen */
  };
 /* These are various pointers to structures,
including our window, any messages we might
receive and to the intuition library which
we're going to open. */
struct Window *our_window = NULL;
struct IntuiMessage *imessage = NULL;
struct IntuitionBase *IntuitionBase = NULL;
/* This is the main code. It will open the
intuition library, open the window, wait for
the user to close it, and then exit. */
void main(void)
{
 BOOL exit_program = FALSE;
 long signal_mask;
 /* Open the intuition library. This contains
the window and gadget functions we're going
to be using */
 if (!(IntuitionBase = (struct IntuitionBa☛
se *) OpenLibrary("intuition.library", 34L)))
   {
   printf("Can't open intuition.library.\n");
   cleanexit(10);
   }
 /* Now try and open our new window */
 if (!(our_window =
OpenWindow(&test_window)))
   {
   printf("Can't open window.\n");
   cleanexit(10);
   }
 /* Work out our signal mask */
 signal_mask = 1L << (our_window->User☛
                                  Port->mp_SigBit);
  /* Now we loop around forever until the user
closes our window */
  while (!exit_program)
    {
 /* Wait for something to happen */
    Wait(signal_mask);
 /* If it's relevant, act on it */
    while (imessage = (struct IntuiMessage▼☛
               *)GetMsg(our_window->UserPort))
      {
      switch(imessage->Class)
        {
/* If it's close window, set the exit flag */
        case CLOSEWINDOW:
          exit_program = TRUE;
          break;
        }
      /* Now we've dealt with the message,
reply to it */
      ReplyMsg((struct Message *)imessage);
      }
    }
 /* All done, close up and quit */
  cleanexit(NULL);
}

/* void cleanexit(error_code)
 This routine simply tidies up anything which
is open before exiting the program */
void cleanexit(int return_value)
{
 if (IntuitionBase) CloseLibrary((struct▼☛
                     Library *)IntuitionBase);
 if (our_window) CloseWindow(our_window);
 /* Exit the program */
 exit(return_value);
}
```

E&OE
11/8/93

White Knight Technology

PROFESSIONAL AMIGA SPECIALISTS

Access
VISA
SWITCH
2.5% Surcharge on Credit Cards only. Not Switch or Visa-Dellta.

☎ 0992 714539

10am-7pm Monday - Friday
11am-4pm Saturday

PO BOX 2395, WALTHAM CROSS, HERTS EN8 7HQ

White Knight

A500 ACCELERATORS

GVP A530 Turbo 40MHz 68030, 1Mb

with: 42 Mb hard drive	£ 489
85 Mb hard drive	£ 589
120 Mb hard drive	£ 685
210 Mb hard drive	£ 779

A500/1500/2000 ACCELERATORS

SUPRA 28MHz Turbo (68000)	£ 139
CSA Derringer, 25MHz 68030 & 881	
with: 0 Mb 32-Bit RAM	£ 329
1 Mb 32-Bit RAM	£ 399
2 Mb 32-Bit RAM	£ 439
4 Mb 32-Bit RAM	£ 509
8 Mb 32-Bit RAM	£ 669
CSA Derringer, Platinum 50 50Mhz 68030 (optional 50MHz 68882)	
with: 0 Mb 32-Bit RAM	£ 449
1 Mb 32-Bit RAM	£ 519
2 Mb 32-Bit RAM	£ 559
4 Mb 32-Bit RAM	£ 629
8 Mb 32-Bit RAM	£ 789

A1500/2000 ACCELERATORS

Commodore 2620, 14MHz 68020/68881	
with: 2 Mb 32-Bit RAM	£ 195
Commodore 2630, 25MHz 68030/68882	
with: 2 Mb 32-Bit RAM	£ 349
IVS Vector, 25MHz 68030/882	£ 449
GVP G-Force, 25MHz 030/882 + 1	£ 349
GVP G-Force, 40MHz 030/882 + 4	£ 689
GVP G-Force, 50MHz 030/882 + 4	£ 989
GVP G-Force, 33MHz 040 + 4Mb	£ 1279
CSA Magnum, 28MHz 040/SCSI-2	£ 849
RCS Fusion Forty, 28MHz 040	£ 765

A3000/T ACCELERATORS

Commodore A3640, 2MHz 040	£ 895

A4000/030 ACCELERATORS

Commodore A3640, 2MHz 040	£ 895

PP&S Products No Longer Available

ALL PRICES INCLUDE VAT

A1200 ACCELERATORS

GVP A1230, 40MHz 030, 0Mb	£ 245
GVP A1230, 40MHz 030, 1Mb	£ 305
GVP A1230, 40MHz 030, 4Mb	£ 395
GVP A1230, 40MHz 030/882 +4	£ 485
Microbotics M1230XA	
with: 33 MHz 68030, MMU, 0Mb	£ 259
40 MHz 68EC030, 0Mb	£ 289
50 MHz 68030, MMU, 0Mb	£ 329
CSA 12 Gauge	
50 MHz 68030 & MMU + SCSI, 0Mb	£ 549

AMIGA 4000

A4000/030, 2Mb RAM, 80Mb	£ 949
A4000/030, 2Mb RAM, 120Mb	£ 1049
A4000/030, 2Mb RAM, 170Mb*	£ 999
A4000/030, 2Mb RAM, 250Mb*	£ 1059
A4000/040, 6Mb RAM, 80Mb	£ 1899
A4000/040, 6Mb RAM, 120Mb	£ 1999
A4000/040, 6Mb RAM, 170Mb*	£ 1969
A4000/040, 6Mb RAM, 250Mb*	£ 2029

* Drive not covered by WANG On-Site Warranty

AMIGA 3000

25MHz 68030 not EC **& 68882,** 2Mb RAM

with: 52 Mb HD & Amigavision	£ 849
105 Mb HD & Amigavision	£ 959

AMIGA 1200

A1200 - No Hard Drive	£ 295
A1200 + 30Mb Hard Drive	£ 389
A1200 + 64Mb Hard Drive	£ 439
A1200 + 85Mb Hard Drive	£ 489
A1200 + 127Mb Hard Drive	£ 519
A1200 + 210Mb Hard Drive	£ 589

All A1200's are covered by WANG On-Site Warranty.

MEMORY

4Mb SIMM-32	£ 180
4Mb SIMM-8	£ 175
2Mb SIMM-32	£ 109
1Mb SIMM-32	£ 70
1Mb SIMM-8	£ 45
4Mb SC ZIP's	£ 209

Please note Memory Prices are rising Daily

HARD DRIVES

A500

GVP HD8+ 80Mb	£ 345
GVP HD8+ 120Mb	£ 389
GVP HD8+ 213Mb	£ 489
C=A590, 20Mb	£ 195
Alfa, 40Mb IDE	£ 219

A600/1200

60Mb & Cable	£ 185
80Mb & Cable	£ 215
120Mb & Cable	£ 275
210Mb & Cable	£ 389

A1500/2000 & A3000

105Mb SCSI 3.5"	£ 229
127Mb SCSI 3.5"	£ 245
170Mb SCSI 3.5"	£ 275
240Mb SCSI 3.5"	£ 339
330Mb SCSI-2	£ 449
425Mb SCSI-2	£ 579
525Mb SCSI-2	£ 729
1.0Gb SCSI-2	£ 969
2.0Gb SCSI-2	£ 1425
3.5Gb SCSI-2	£ 2649

A4000

170Mb IDE 3.5"	£ 215
212Mb IDE 3.5"	£ 235
256Mb IDE 3.5"	£ 269
340Mb IDE 3.5"	£ 349
420Mb IDE 3.5"	£ 439

HARD DRIVE CONTROLLERS

A500

GVP HD8+	£ 185
ICD Trifecta EC	£ 159
ICD Trifecta LX with both SCSI-2 & IDE	£ 215
Alfa Power IDE	£ 119

A1500/2000

BSC AT-Bus 2008	£ 99
GVP HC8+	£ 129
ICD Trifecta LX	£ 149

A3000/4000

Fastlane Z3 SCSI-2 & up to 256Mb RAM	£ 449
Commodore A4091	£ 219

AMOS Action

Continuing our DIY tutorial, Jason Holborn adds a tool bar to our AMOS paint program.

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

After typing in and running last month's listing, you should see a screen format requester that (once you've selected the screen mode you require) opens up the required type of screen. This month I'll present and explain the next part of the paint program source code – the toolbox.

Commercial paint programs such as *Deluxe Paint* present the user with a strip of tiny icons grouped into what programmers call a "toolbox". Each icon gives the user of your paint program immediate access to a different painting function, ranging from the usual freehand, line, box and circle drawing, to "Undo", screen clear and so on. The toolbox is kept completely separate from the picture that you're painting, so it doesn't get in the way of your creative urges.

Our AMOS paint program (or *AS Paint*, as I've affectionately called it) has a toolbox too. It contains a total of ten different icons, each of which performs a different task. All of the program's various functions are accessed from within this toolbox, so we don't need to create any pull-down menus. What's more, our toolbox is kept in its own screen which is completely separate from the electronic canvas that you draw onto. The icon toolbox can be moved up and down the screen by dragging it with the mouse pointer. There's even a gadget included that displays the currently selected colour!

Anyway, let's get stuck into some AMOS coding. As I said last month, our paint program is fully Easy AMOS and Amos Pro compatible, so there's no excuse for not typing it in. Even if you got AMOS from a magazine cover disk, you can still follow this tutorial.

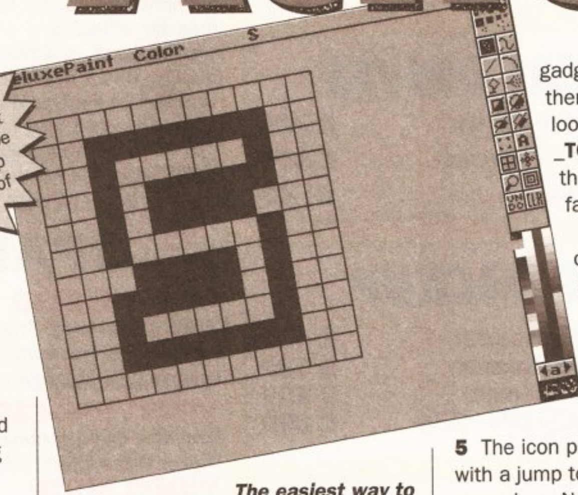
1 In order to get the main program to handle the new routines we've added this month, a few lines of extra code have to be added to the main program. The first addition is a variable called **CURCOLOR** that is used to hold the current pen colour setting fory the drawing functions.

2 The variable is made global so that all the drawing functions can access it.

3 Next, the **_TOOLBOX** procedure is called. This procedure does all the hard work of setting up the toolbox display. Lines 3 through to 7 are to be added between the **_OPENSCREEN** and **End** lines of last month's listing.

4 The main program then enters a **Repeat...Until** loop that continuously monitors and controls all the gadgets. Before checking them, though, the main loop jumps to the **_TOOLDRAG** procedure that handles the drag bar facility on the toolbox.

After checking the drag bar, the main loop then calls the **_COLORSELECTOR** procedure that handles the colour selector gadget.



The easiest way to design gadget imagery is to make a grid within a paint program such as Deluxe Paint. By creating a stencil that locks to the grid, you can design your gadgets using the same grid over and over again. here's the grid for the "Save" function.

5 The icon processing can begin with a jump to the **_CHECKICONS** procedure. Note that a variable called **SELECTED** is passed to this procedure. It contains the number of the currently selected tool. By default, it is set to 0 (which means that no tools have been selected).

6 The value returned by the **_CHECKICONS** procedure is then stored back into the **SELECTED** variable, reflecting any change of selected tool.

7 Finally, the loop is terminated if `SELECTED = 19` (which means that the **Quit** gadget was selected). If **SELECTED** contains any other value, the loop returns control to step 2.

8 The first of our new procedures – the **_TOOLBOX** procedure. It sets up the toolbox display. Place this and the following procedures after the end of those you entered from last month's listing.

9 The **GADGSIZE** variable controls the size of the icons themselves. Each icon will be 12 x 12 pixels in size (the same as for *DPaint*).

10 The procedure then opens the screen that will contain the toolbox. Note how the vertical size of the screen is calculated according to the size of the gadgets themselves. If we were to increase the size of the gadgets, the screen too would automatically increase in size.

11 We then set up the colour palette using AMOS's **Palette** command.

12 Before setting up the icons we need to allocate memory for the screen zones by telling AMOS how many zones (icons) we wish to create. Although we need only 20 icons, the screen drag bar and colour selector are both treated as icons too. The **COUNTER** variable is

BEGINNERS BEGINNERS START HERE BEGINNERS

What is AMOS?
AMOS is a variant of BASIC, a programming language originally designed for beginners. There's nothing trivial about AMOS, though – with it you can write just about any sort of program you want. AMOS is especially tailored to give you easy access to the Amiga's graphics and sound facilities, and as such is good for writing simple games (it hasn't the speed for the more frenetic arcade-style games) and graphics demos. AMOS is an interpreted language.

What is an interpreter?
An interpreter is a program that translates each line of AMOS code into machine code, the language that is understandable to the Amiga's central processor. Programs written with an interpreter are slower than those written with a compiler, because they must be re-translated each time they run. Also, the interpreter must also be loaded into memory, meaning that programs are relatively inefficient in terms of memory consumption. The advantage is that programs are easier to develop; making changes and getting rid of errors is a relatively hassle-free process.

Which AMOS should I get?
There are three variants: Easy AMOS, designed with the beginner in mind (though the paint program featured here is fully AMOS-compatible, so don't be misled into thinking Easy AMOS is no good); the original AMOS The Creator, which has been given away on a couple of magazines' cover disks, and AMOS Professional, which comes with a number of extensions to make it competitive with the likes of C.

How can I make it go faster?
A compiler is now available, compatible with all variants of AMOS. It will translate AMOS programs into stand-alone modules that will run much more quickly, without need for the compiler or the AMOS editor to be present in memory. See the review on page 58 for details.

Where can I get AMOS?
Easy AMOS costs £34.99; AMOS The Creator £49.99; AMOS Pro costs £49.99; and the AMOS Pro Compiler (also compatible with AMOS and Easy AMOS) costs £34.99. All are available from Europress Software ☎ 0625 859333.

initialised too – it is used to keep track of the current icon number when creating the zones.

13 The first part of the icon drawing process is to draw the 20 boxes that will frame them. To do this, the program enters a **For....Next** loop that is performed ten times, once for every two icons.

14 Because our icon strip is split into two lots of ten icons, two need to be drawn for every pass of the **For...Next** loop. This instruction draws the top icon box.

15 With the icon box drawn, its position is then assigned a screen zone so that it automatically becomes a screen "hot spot", meaning AMOS will let us know if the mouse pointer moves over it.

16 The second icon box is drawn immediately below the first.

17 A screen zone is then defined for this box too. A value of 10 is added to the **COUNTER** variable so that AMOS knows that this second gadget is actually part of the second set of ten icons.

18 To give the icons a Workbench 2.0-like "bas-relief" look, four AMOS **Draw** commands are used to darken the bottom and right-hand edges of both boxes that we've just drawn.

19 The **COUNTER** variable that is used to control zone definitions is then incremented before the control loops back for the next pair of icons.

20 Now we move on to the colour box gadget, which displays the current pen colour used for drawing operations. The first step is to draw the box that will contain the colour using colour 2 (light brown).

21 To give that Workbench 2.0 look to this gadget, the bottom edge of the gadget is drawn in black.

22 Followed by the right-hand edge.

23 Finally, the colour box gadget is completed by filling in its centre using the AMOS **Bar** command (this draws a filled box). The box is filled using colour register 5, which,as we shall see when we come to code the routine that handles the colour selector, changes whenever a new colour is chosen.

24 The colour selector gadget is then defined to be screen zone number 21.

25 Next we move on to the drag bar, the area of the toolbox that can be dragged with the mouse to move the toolbox up and down the screen. The first thing we need to do is draw the border around the drag bar using the AMOS **Box** command.

26 Using **Set Zone** the box is then defined as screen zone 22.

27 We need to draw the highlights around the box. First we draw the bottom edge of the box.

28 We then draw the right hand edge to complete the box border.

29 We need to add some text to the drag bar. We start, though, by calculating where the text should be placed.

30 So far the presentation of the toolbox is top notch, so the text itself needs to look the part too. In this case, we'll be creating a sort of shadow effect for the text. In order to do this, we need to set the drawing mode to zero so that AMOS doesn't draw over the top of the shadow once we draw the main text. This is done using the handy **GrWriting** command.

31 After setting the text colour to zero (black), we draw the shadowed text using the **Text** command. This command draws text as a graphic and can therefore place text anywhere on the screen at single pixel resolution.

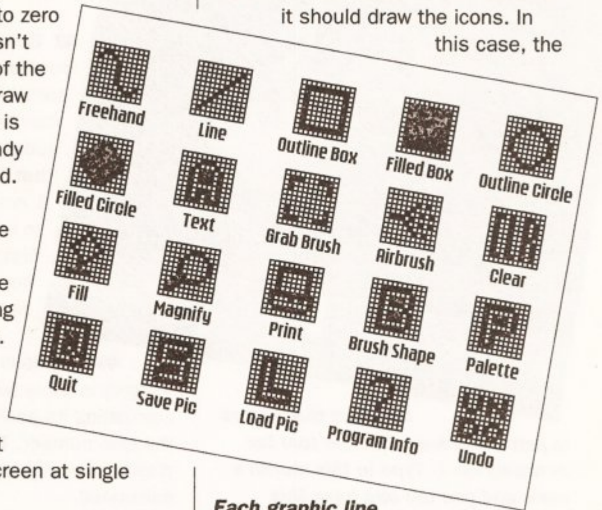
With the shadow drawn, we draw the main "AS Paint v1.0" text on top of it at a slight offset (1 pixel) so that the shadow shows through.

32 With all the gadgets set up, we then move on to the **_SETUPICONS** procedure that draws the icon imagery into the boxes. In order for it to work we need to pass it the size of the icon squares. In this case, a value of 12 will be passed.

33 Next, we move on to the start of the **_SETUPICONS** procedure.

34 To make life easier should you decide to modify the toolbox yourself (say you want to add more tool icons), the **_SETUPICONS** procedure is flexible enough so that it can automatically draw any extra icons without further modification. The number of icons it should draw is held in a variable called **NUMICONS**.

35 The routine needs to know where it should draw the icons. In this case, the toolbox is screen number 7, so we change to this screen using the **Screen 7** command, which re-routes all drawing operations to this screen.



Each graphic line was converted into a binary number which was converted into a more compact decimal number. Each gadget has 11 of these numbers associated with it, one for each row.

36 All the gadget imagery information is held within the **_SETUPICONS** routine as a series of data statements. AMOS won't automatically use this data unless we tell it to, so we use the **Restore** command to point AMOS to this

LISTING: *AS PAINT* TOOL ICONS

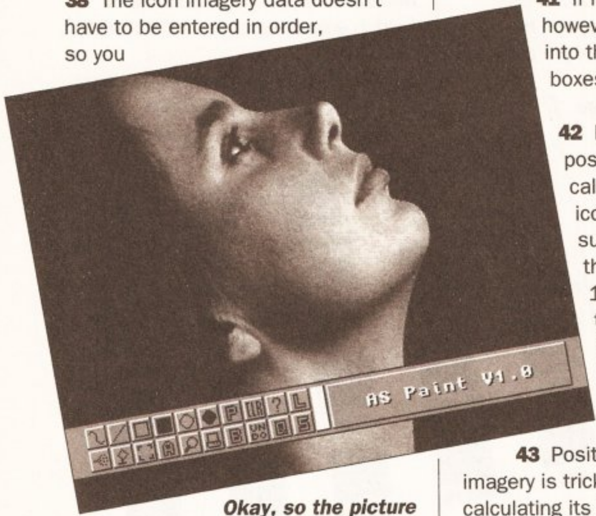
```
' *** AS Paint V 0.1b
' *** Written by Jason Holborn
' *** For Amiga Shopper
'
    SCRMOD=1
    CLOURS=9
1.  CURCOLOR=1
    Dim GADG(20,4),PALTTE(32)
    Global SCRMOD,CLOURS,GADG(),☛
                          PALTTE()
2.  Global CURCOLOR
    '
    MAIN:
    _SCREENFORMAT
    _OPENSCREEN
3.  _TOOLBOX
    '
    Repeat
4.      _TOOLDRAG
        _COLORSELECTOR
5.      _CHECKICONS[SELECTED]
6.      SELECTED=Param
7.  Until SELECTED=19
    '
    End
    '
    '
8.  Procedure _TOOLBOX
9.      GADGSIZE=12
10.     Screen Open 7,320,7+☛
              GADGSIZE*2,8,Lowres
        Flash Off : Curs ▼☛
                    Off : Cls 1
11.     Palette $0,$A86,$ECA,☛
         $FF0,$ECA,$FF0,$F00,$FF0
        '
        Rem *** Draw Toolbox ▼☛
     icons and set up gadget zones
        '
12.     Reserve Zone 22 : ▼☛
                        COUNTER=1
13.     For A=GADGSIZE To ▼☛
    20+GADGSIZE*10 Step GADGSIZE+2
            Ink 2
14.         Box A,2 To ▼☛
              A+GADGSIZE,2+GADGSIZE
15.         Set Zone COUNTER,A,☛
        2 To A+GADGSIZE,2+GADGSIZE
16.         Box A,4+GADGSIZE ▼☛
        To A+GADGSIZE,4+GADGSIZE*2
17.         Set Zone COUNTER+10,☛
    A,4+GADEGETSIZE To A+GADGSIZE,☛
                      4+GADGSIZE*2
            Ink 0
18.         Draw A,2+GADGSIZE ▼☛
         To A+GADGSIZE,2+GADGSIZE
            Draw A+GADGSIZE,2 ▼☛
         To A+GADGSIZE,2+GADGSIZE
            Draw A,4+GADGSIZE*☛
      2 To A+GADGSIZE,4+GADGSIZE*2
            Draw A+GADGSIZE,☛
       4+GADGSIZE To A+GADGSIZE,☛
                      4+GADGSIZE*2
19.         COUNTER=COUNTER+1
        Next A
        `
        Rem *** Set Up Colour Box
        `
        Ink 2
20.     Box 20+GADGSIZE*11,2 ▼☛
     To 28+GADGSIZE*11,4+GADGSIZE*2
        Ink 0
21.     Draw 20+GADGSIZE*11,☛
   4+GADGSIZE*2 To 28+GADGSIZE*11,☛
                      4+GADGSIZE*2
22.     Draw 28+GADGSIZE*11,2 ▼☛
     To 28+GADGSIZE*11,4+GADGSIZE*2
        Ink 4
23.     Bar 21+GADGSIZE*11,3 ▼☛
     To 27+GADGSIZE*11,3+GADGSIZE*2
24.     Set Zone 21,21+GADGSIZE*☛
         11,3 To 27+GADGSIZE*11,☛
                      3*GADGSIZE*2
        `
        Rem *** Set up Drag ▼☛
                       Bar gadget
        '
        Ink 2
25.     Box 30+GADGSIZE*11,2 ▼☛
                To 310,4+GADGSIZE*2
26.     Set Zone 21,30+☛
   GADGSIZE*11,2 To 310,4+GADGSIZE*2
        Ink 0
27.     Draw 30+GADGSIZE*11,☛
    4+GADGSIZE*2 To 310,4+GADGSIZE*2
28.     Draw 310,2 To ▼☛
                  310,4+GADGSIZE*2
29.     POSITION=(30+GADG☛
            SIZE*11)+(310-(30+☛
            GADGSIZE*11)-104)/2
30.     Gr Writing 0
        Ink 0,0
31.     Text POSITION+1,☛
    (GADGSIZE*2)/2+7,"AS Paint V1.0"
        Ink 3,0
        Text POSITION,☛
    (GADGSIZE*2)/2+6,"AS Paint V1.0"
        '
32.     _SETUPICONS[GADGSIZE]
        '
    End Proc
    '
33. Procedure ▼☛
            _SETUPICONS[GADGSIZE]
34.     NUMICONS=20
        `
35.     Screen 7
36.     Restore GADGIMAGEDATA
        '
37.     For A=1 To NUMICONS
38.         Read GADGNUM
39.         If GADGNUM<11
```

continued on page 70

particular section of our data.

37 The routine enters a loop to read in and draw each icon.

38 The icon imagery data doesn't have to be entered in order, so you don't have to define all your icons in order. Instead, the routine needs to be told which icon it is currently working on – this is done by reading the icon number first. Once read, it is placed into a variable called **GADGNUM**.



Okay, so the picture is just a mock-up, but the tool bar certainly isn't. Type in this month's code and you too can have this lovely tool box on your Amiga.

39 Now that we know which icon we're working on, the routine then calculates the Y position of the icon. Because our icons are arranged into two sets of ten, however, the two sets have different Y positions. An **If...Then** construct is used to decide where the icon should be placed.

40 If the Icon number is less than 11, it is placed into the top set of icon boxes by setting the Y position to 3.

41 If it is greater than 10, however, then it is placed into the second set of icon boxes.

42 Because the X position of the icon is calculated using the icon's number, we subtract 10 from it so that it ranges between 1 and 10. If the icon is to be placed into the first, top-most, bank, however, this need not be done.

43 Positioning the icon imagery is tricky since we're calculating its position according to the icon number. To ensure that it is placed correctly, an offset value is calculated.

44 The offset calculated is used to help calculate the X position of the icon imagery.

45 With the position of the icon imagery calculated, we can start to draw it into the icon box. The icon imagery is held as an 11 x 11 pixel matrix. To plot this data, a two-stage **For...Next** loop is used. The first of these loops is used to ensure that exactly 11 lines are drawn.

46 Before entering the second loop, however, we read an entire strip of dots encoded as a decimal number. A value of 2,046, for example, will give a dot pattern of "11111111110", where a 1 represents a painted pixel and a 0 represents a pixel left blank. Anyone who has studied binary notation will know that this also just happens to be the binary equivalent of 2,047.

47 Obviously the decimal number is no use to us, so we next convert it into a binary number using the **Bin$** function. The resulting binary number is placed into a string variable called **GADGDATA$**.

48 So far all we have is an 11-digit binary number which defines a whole strip of gadget image data. We therefore extract each digit in turn using the **Mid$** function. This places a single digit (which is converted to decimal using the **Val** function) in the variable **PIXCOLOR**.

49 Now that we've extracted the pixel colour from the binary code, the dot is plotted on screen using the colour indicated by the binary digit (0=Clear, 1=Black).

50 This single number dictates the icon number. A value of 1, for example, tells the icon plotting routine that this is the data for icon number 1.

51 Here we have the 11 lines of image data that, in turn, contain 11 items of dot information. Each dot value defines the ink colour to be used for that particular dot.

52 With the toolbox complete, we move on to the **_TOOLDRAG** procedure that handles the user-controlled dragging of the toolbox up and down the screen.

53 In order for the tool bar to be recognised, we tell AMOS to switch to screen 7 (the toolbox screen). This in effect turns the tool bar screen zones on so that we can monitor them. Only one screen zone is of interest to us though, so we now check to see whether the mouse is currently over screen zone 22 and whether the left mouse button is being pressed.

54 If it is, we alter the position of the toolbox screen by setting the Y position of the screen to the Y position of the mouse. So if you hold down the left mouse button over the drag bar, the toolbox screen will follow the mouse.

55 To keep the screen movement in sync with the display, the **Wait VBL** command is used. This ensures smooth screen movement.

56 Finally we reset the current screen to zero so that all subsequent drawing operations are carried out on our electronic canvas.

57 The **_CHECKICONS** procedure is used to monitor the activity of the toolbox icons. We'll be covering this routine next month. In the meantime, enter this short code "stub" to make the code that we have so far work.

58 The **_COLORSELECTOR** procedure controls the colour selector gadget. Once again, we'll be covering this next month, so for the moment just enter the short code stub so that *AS Paint* still works in its current form. AS

Listing continued from page 69

```
40.          Y=3
         Else
41.          Y=GADGSIZE+5
42.          GADGNUM=GADGNUM-10
         End If
43.      OFFSET=-1+(2*GADGNUM)
44.      X=(GADGSIZE)*☛
                GADGNUM+OFFSET
45.      For B=0 To GADGSIZE-2
46.          Read GADGDATA
47.          GADGDATA$=Bin$☛
                    (GADGDATA)
             For C=0 To ▼☛
                    GADGSIZE-2
48.              PIXCOLOR☛
      =Val(Mid$(GADGDATA$,2+C,1))
49.              Plot X+C,☛
                  Y+B,PIXCOLOR
             Next C
         Next B
      Next A
      '
      Rem *** Icon Image Data
      '
      GADGIMAGEDATA:
50.   Data 1
51.   Data 2047,1663,1471,☛
     2015,2015,2015,2015,2015,☛
                2029,2035,2047
      Data 2
      Data 2047,2045,2043,☛
     2039,2031,2015,1983,1919,☛
                1791,1535,2047
      Data 3
      Data 2047,1025,1533,☛
     1533,1533,1533,1533,1533,☛
                1533,1025,2047
      Data 4
      Data 2047,1025,1025,☛
     1025,1025,1025,1025,1025,☛
                1025,1025,2047
      Data 5
      Data 2047,1935,1911,☛
     1787,1533,1533,1533,1787,☛
                1911,1935,2047
      Data 6
      Data 2047,1935,1799,☛
     1539,1025,1025,1025,1539,☛
                1799,1935,2047
      Data 7
      Data 2047,1543,1787,☛
     1675,1675,1787,1671,1727,☛
                1727,1599,2047
      Data 8
      Data 2047,1203,1461,☛
     1461,1461,1459,1461,1461,☛
                1461,1173,2047
      Data 9
      Data 2047,1935,1911,☛
     1911,2039,2031,2015,2015,☛
                2047,2015,2047
      Data 10
      Data 2047,1599,1727,☛
     1727,1727,1727,1727,1667,☛
                1787,1539,2047
      Data 11
      Data 2047,2047,2027,☛
     2015,1973,1119,1973,2015,☛
                2027,2047,2047
      Data 12
      Data 2047,2015,1967,☛
     1911,1787,1911,1967,1951,☛
                1983,1551,2047
      Data 13
      Data 2047,1137,1533,☛
     1533,2047,2047,2047,1533,☛
                1533,1137,2047
      Data 14
      Data 2047,1935,1911,☛
     1675,1675,1675,1787,1675,☛
                1707,1571,2047
      Data 15
      Data 2047,1991,1979,☛
     1917,1917,1917,1851,1543,☛
                1151,1279,2047
      Data 16
      Data 2047,1539,1787,☛
  1787,1787,1787,1025,1493,☛
                1533,1539,2047
      Data 17
      Data 2047,1543,1787,☛
     1675,1675,1783,1675,1675,☛
                1787,1543,2047
      Data 18
      Data 2047,1453,1445,☛
     1449,1645,2047,1139,1453,☛
                1453,1139,2047
      Data 19
      Data 2047,1539,1787,☛
     1675,1675,1675,1707,1683,☛
                1771,1539,2047
      Data 20
      Data 2047,1539,1787,☛
     1667,1671,1787,1803,1547,☛
                1787,1539,2047
   End Proc
   '
52. Procedure _TOOLDRAG
       Screen 7
53.    If Mouse Zone=22 and ▼☛
                   Mouse Key=1
54.        Screen Display 7,☛
                ,Y Mouse-15,,
55.        Wait Vbl
       End If
56.    Screen 0
    End Proc
    `
57. Procedure _CHECKICONS ☛
                   [SELECTED]
       Rem *** Check icon ▼☛
              code goes here...
    End Proc[SELECTED]
58. Procedure _COLORSELECTOR
       Rem *** Colour ▼☛
           selector code here...
    End Proc
```

Another great offer from a manufacturer you can trust



CAX 354 DISK DRIVE £49.95*

**Price includes VAT and delivery*

- **High quality**
- **Renowned and proven reliability**
- **Styled plastic case**
- **Low power consumption**
- **Throughport facility for addition of further drives**
- **Suits any Amiga**

Order with Confidence

- All Cumana products carry our 30 day money back guarantee
- All products carry our 12 month warranty
- All inclusive price

umana reserve the right to increase the price
any time. This offer is subject to availability.

NAME ______________________ ADDRESS ______________________

____

POSTCODE ______________________ TELEPHONE NO. ______________________

I would like to order .... CAX354 Disk Drive(s) at £49.95 each

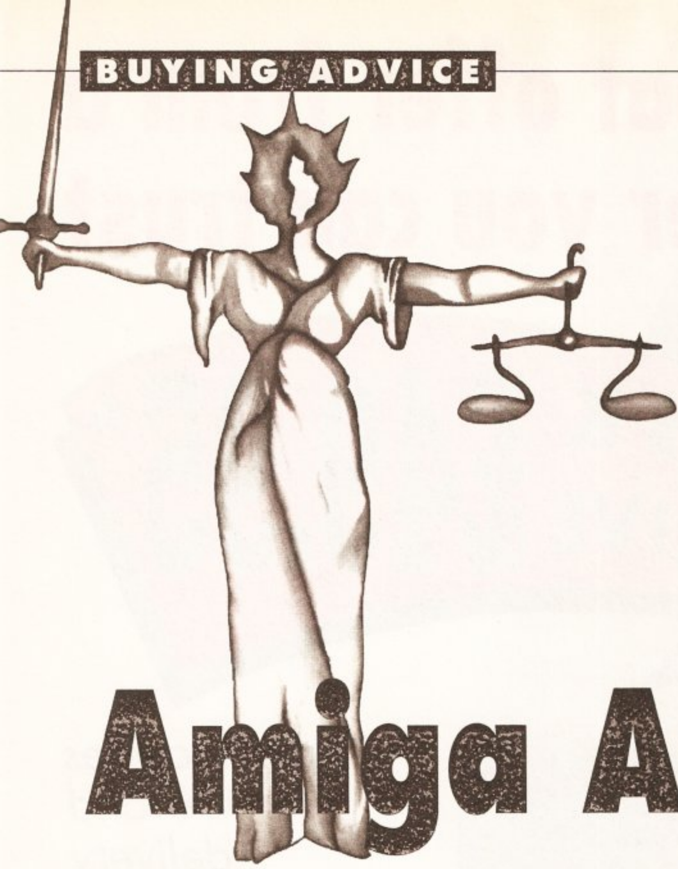
Please debit my ACCESS/VISA card (please delete);

Number ______________________ Expiry date of card _____ / _____

Signature ______________________

Cheques should be made payable to Cumana Limited.
Orders may be placed by telephone – 0483 503121, or by fax – 0483 451371, or sent to – Cumana CAX 354 Offer, Pines Trading Estate, Broad Street, Guildford, Surrey GU3 3BH.

Manufacturers of quality products since 1979



Buying by mail can save you time, trouble and money, but what are the legal problems? Solicitor Kevin Walsh explains your rights as a mail order Amiga shopper, then reveals how to get results if something goes wrong.

Amiga Advocate

Have you ever bought goods by mail order? It often works out cheaper than buying from High Street shops, and can offer a wide choice of goods. It makes very little difference to your legal rights, but it does create pitfalls which you ought to be aware of and try to avoid.

First, the seller will be a relatively unknown firm. With local shops you usually know how long they have been trading, what sort of reputation they have, and so on, but you can't tell if mail order firms only set up last week or are as much of a cowboy outfit as John Wayne's trousers.

However, you can try flicking through back issues to see which companies are well-established. Don't be fooled by the size of advert – big or small, crooks use them all.

Avoid adverts which give only a PO Box number. Reputable companies have no reason to hide their address, whereas dodgy ones won't want disgruntled customers, Trading Standards officers or the Inland Revenue to find them. And when you order, ask for a receipt – by law all receipts must contain the full trading name of the business and its registered address. This may prove invaluable if there's a dispute.

Look for firms which have invested in themselves and have a consumer credit licence or accept payment by credit cards. These are not proof of integrity, but are usually subject to at least a brief check into the company and its owners.

The second pitfall of mail order is that you cannot examine goods before you purchase them. It is therefore vital to be aware of your legal rights beforehand. You will only be allowed to return goods and get a full refund if the goods are faulty, excluding minor or trivial faults such as a superficial scratch or a missing component which is easily replaceable. You are not entitled to a refund simply because you don't like the look of something, have changed your mind, or it isn't quite what you expected, unless you can prove that your expectations were reasonable – for example, you were told by the seller what to expect and the goods did not live up to this.

It is therefore a good idea to try to find out as much as possible about goods before you order them. Visit a local supplier if you can and get a demonstration. Check that what you are ordering is the same version or model – or if it is slightly different, check what exactly these differences are. Remember that with mail order you only get what you ask for, so make sure it's what you want.

The third pitfall, and possibly the biggest concern about buying by mail order, is the delay between paying your money and getting your goods. As the law currently stands, as soon as the seller receives your order the money becomes his, and he becomes obliged to send you the goods ordered. If he does not, you must bring a court action to recover the money – so if he has gone bankrupt between receiving your order and dispatching the goods, you can probably kiss goodbye to both your money and the chance of receiving your goods. If you minimise the period between the seller receiving your money and sending out your order, this minimises the risk of losing your money.

Credit card companies insist that

THE SECRET OF EFFECTIVE COMPLAINING

Suppose after receiving your goods you find a fault – what should you do? How can you complain most effectively? The art of effective complaining lies in preparation, and not simply telephoning to give the dealer a piece of your mind.

The first thing to do is to identify exactly what the problem is, being as specific as you can – a particular component is missing, a particular program refuses to function at a particular point, etc. Next, identify exactly what you expect the seller to do about it – repair, replace or refund. This usually causes problems because consumers expect more from purchases than the law requires sellers to provide. Again be as specific as you can – for example, if you seek financial compensation, how much and why?

Pause at this stage and consider your position. Having decided what you want, are you legally entitled to it? For a full refund, there must be a breach of a *condition* of the contract, or what in Scotland is called a *material breach of contract* – a breach of something *essential* to the contract. If not, you are only entitled to the cost of repair or bringing the goods up to the standard specified.

Even if you are not entitled to the remedy that you seek, sellers aim to keep their customers satisfied, so there can be no harm in asking.

Having identified your problem and what it would take to satisfy you, you can now set about complaining. Whether you're dealing with a mail order or an over-the-counter purchase, it's a good idea to note down in writing all the points relevant to your case – dates, times, names, what was said, and so on.

The first step is always contact the sales rep (the person you spoke to before) and put your point across politely. In most cases, where an amicable settlement is going to be agreed it will be done at this stage.

If this approach is unsuccessful, ask to speak to the person in charge, whether immediately or by making an appointment for a more convenient time. Again, put your point of view politely, explain the facts and state why you believe that you are legally entitled to the remedy sought. Do not demand a solution immediately, but be ready to give the seller some time to consult the manager or whatever. Follow this up by recorded-delivery letter, clearly stating your grievance, your proposed solution, and referring to all relevant dates and conversations.

When complaining by letter, always include a time limit within which the other party should respond. This will highlight the urgency of the matter, and implies that failure to reply within this period will result in the matter being taken further. It also shows the seller that you are not prepared to accept feeble excuses and delay just because the acting deputy manager for customer relations is on holiday for two weeks. At this point the seller is unaware whether or not you will pursue the matter further – whether via the courts, Trading Standards, or the press – and probably won't be prepared to call your bluff. But be sure the timescale is reasonable. I would suggest allowing seven to ten days from receipt of your letter.

Most dealers will at this stage agree at least to reconsider your case, and so try to keep the whole affair a private matter and avoid any adverse publicity or court orders.

Cases that go beyond this stage invariably do so because of one of three things: either the buyer is being unreasonable in his requests, the seller is ignorant of his legal responsibilities, or the seller is aware of his legal liability but considers himself above the law.

At this point there are several options open to the disgruntled

goods be dispatched as your account is charged, which means paying by credit card should ensure speedy service – suppliers know the credit card company will pay up, so there is no likelihood of them sending out goods and then not getting paid. As we explained in *Amiga Shopper* 28, paying by credit card also means you can claim against the credit card company as well as the supplier if there is any breach of contract – very handy if the supplier goes bust. (If you missed *AS* 28, see page 108.)

If you pay by cheque, suppliers will wait to make sure the cheque doesn't bounce, leaving them out of pocket. However, cheques can be cleared in three working days, so there is no excuse for the delay between cashing a cheque and dispatching an order exceeding this. Consequently, whenever you order you should stipulate that this is an *essential condition of your order.* The importance of the word *essential* is that if the condition is breached, you are entitled to cancel the contract without further notice.

Having made this stipulation, follow it up. First class mail normally arrives the day after posting, so allow a further three days, then phone the supplier to confirm that the goods have been sent out.

Some suppliers may claim that the goods you ordered are not in stock, or that they are overwhelmed with orders, so they will not be able to supply the goods within your timescale. Politely but firmly insist immediately on a guaranteed delivery date or a full refund.

The final pitfall is that you're conducting business at a distance, so if a dispute arises it must be settled by letters or telephone calls, which can easily be ignored. The solution is to be fully aware of your rights and enforce them firmly.

HOW YOU CAN EXTEND YOUR LEGAL PROTECTION

❶ Be as specific as possible and order exactly the goods you want.
❷ Tell the seller *why* you want the particular goods – game-playing, producing professional colour artwork, and so on. It will then be implied by law that the goods sold are fit for that purpose, unless the purpose is very obscure.
❸ Tell the seller what equipment the goods will be used with. It will then be implied that his goods are compatible with these – a computer shop will be expected to know if an add-on is A1200 compatible, needs Workbench 2 or above, and so on.
❹ Check the details in the advert. Terms such as "prices subject to change" may be included because adverts are often placed four to six weeks before you read them and manufacturers' price rises may be announced in the meantime. So telephone the seller before ordering and get confirmation of all the relevant details. Have a pen and paper handy and always find out the name of the person you are speaking to. Don't quote the price, ask for it. Although the price quoted in the advert might not be legally binding, you should ask why if the price is different from the one in the advert. Ask about any additional costs – for example, delivery, leads, and so on. Confirm if the goods are in stock.
❺ You may want to contact several suppliers for quotes – often there is competition to match or beat prices.
❻ Never send cash for your order. It can be impossible to prove that this was received. Always send a cheque or credit card details, where you can trace who the money was paid to – or as a last resort, a postal order.
❼ The key point to bear in mind is that you are entering into a contract, and with few exceptions the law will not seek to amend the terms agreed between you and the seller. Sellers are aware of this, and their adverts and order forms may incorporate all manner of terms and conditions, all beneficial to them – "subject to the company's usual terms and conditions", and so on. So turn the tables: don't use their order form at the corner of the advert, but rather order by sending a letter, in which you can impose your own conditions.

Include your name and address. Refer to your telephone conversation and state precisely what you want to order and the total price quoted. Then state any contract terms you want included – what happens if the goods are inadequate, faulty etc. Here are some examples to adapt.

1. *I shall be allowed 14 days to examine and inspect the goods before I shall be deemed to have accepted them in fulfilment of your contractual obligations.* (This allows you 14 days to try the goods and reveal any faults without prejudicing your legal right to reject them.)

2. *It is an essential condition of the contract that the goods supplied will work properly for 14 days after purchase.* (This expands your right to reject goods to cover all defects; at law you are only entitled to reject goods if a defect amounts to a breach of a *condition* of a contract.)

3. *This order is entirely conditional upon the goods ordered being in stock and being dispatched within four working days of the attached cheque being presented, failing which I am entitled, without penalty, to a full and immediately refund of all sums paid, and failure to refund immediately shall entitle me to compensation at the rate of £1 per day until a refund is issued, the date of issue being conclusively established by the postmark of the accompanying letter. If you do not anticipate being able to fulfil this condition, the attached cheque should not be cashed, but should be returned to me immediately.* (This is a particularly onerous condition and should only be used when you have confirmed in advance by telephone that the goods are in stock and delivery within the timescale is possible, otherwise it is a waste of your time and the seller's.) AS

WARNING

Amiga Advocate is intended only as a guide to the law, and you should not rely solely on anything said here. Always try to resolve any dispute in an amicable way, and seek independent advice. We cannot give advice on individual cases, act as arbitrators in any dispute, or reply personally to any correspondence.

consumer, depending upon the nature of the complaint. If the trader has broken the criminal law – for example, fraud or applying a false trade description – the appropriate method of proceeding with the dispute is to contact the local Trading Standards department (in the telephone book under your local council), who will investigate the matter and, if sufficient evidence exists, refer the case to the Crown Prosecution Service (or Procurator Fiscal in Scotland) for criminal proceedings to commence. This will establish a trader's criminal behaviour. Customers can then pursue civil actions and refer to the criminal action as evidence.

If the dispute is of a purely civil law nature, which essential means a breach of contract in some way, the first step ought to be to contact your local Trading Standards office, whose advice is free and who may intervene on your behalf. Dealers are often anxious to avoid outside interference in their business, but most recognise that where Trading Standards are involved, the Trading Standards officer will have examined the facts and be of the opinion that a legal case exists, and that they are often being given one last chance to avoid court action.

In addition to pursuing the matter through your local Trading Standards department, several other options are available.

- If the goods involved are new brand-name items like Amigas, complain to the manufacturers. Manufacturers spend large sums promoting their products and are keen to maintain the right image for their products and everything associated with them, including their dealers. If the seller boasts of any association with the manufacturers – "approved dealer", "service agent", and the like – contact the manufacturers, pointing out the trading practices of the seller concerned and asking the manufacturers if they are aware of such practices and do they condone them. Such a loaded question will tend to produce a letter disapproving of any malpractices and may encourage the manufacturers to demonstrate their dissatisfaction to the seller, often persuading them to reconsider and resolve the matter.
- Publicity can do wonders. Sellers seldom operate a monopoly, and other traders are keen for business, so it is in the seller's interest to keep its customers satisfied, or at least appear to do so. Unfavourable coverage in the press, local or national, is likely to damage a seller's reputation and deter potential customers. The effect of the press is obvious when you consider the huge amounts of money spent by dealers and manufacturers in advertising their wares.
- The final option, and perhaps last resort, is court action. This may require you to see a solicitor about initiating court proceedings. Most people are deterred by the perceived cost of this option and often let the matter drop rather than pursue it, but legal advice need not cost you anything at all. Check your home contents or car insurance – these sometimes provide legal representation in consumer disputes. Failing this, head for your local High Street. Most solicitors offer a free initial interview scheme, where the solicitor will spend up to 30 minutes going over the facts with you, primarily to see if there is a possible legal case. If there isn't, he will tell you so, free of charge. Try getting someone to look at a broken computer or washing machine and not charge a fee for coming to the conclusion that there is nothing they can do for it!

Having established that you do have a legal leg to stand on, you can either instruct the solicitor to pursue your case, or do it yourself via the small claims court. For details of this, check the Amiga Advocate column in *Amiga Shopper* 25 (also still available on page 108) and ask the clerk at your local County Court (or Sheriff Court in Scotland) for further information. Look up your local Citizen's Advice Bureau or local law centre for further assistance – that's what they're there for.

QUALITY AT THE

THE FIRST 9Mb 32 BIT INTERNAL RAM CARD FOR AMIGA 1200

Features:

- ★ Integrated 32 bit Ram conveniently expandable to 5Mb or 9Mb (comes with 1Mb installed). Giving a maximum capacity of up to 11Mb to your Amiga 1200.
- ★ Option to conveniently install on FPU with up to 50MHz and Oscillator to increase performance.
- ★ Real-time battery backed-up clock, a must for hard drive users.
- ★ Auto-config with zero wait states.
- ★ More than twice as fast as the graphic RAM of the Amiga 1200 thanks to the double clock rates and shorter access cycles.
- ★ 100% compatible with all Amiga 1200.
- ★ Easy installation. Just plug in and go.

Important:
Please note: to operate the Mathematic Co-Processor with clock rates over 14MHz you need a Quartz (Oscillator). The Quartz (Oscillator) must have the same clock rates as the Mathematic Co-Processor.

ITEMS	PRICE
AF1200 1Mb with clock, no Oscillator, no FPU Processor	£115.00
AF1200 5Mb with clock, no Oscillator, no FPU Processor	£239.00
AF1200 5Mb with clock, Oscillator, 16MHz 68882 FPU	£285.00
AF1200 5Mb with clock, Oscillator, 20MHz 68882 FPU	£290.00
AF1200 5Mb with clock, Oscillator, 25MHz 68882 FPU	£295.00
AF1200 5Mb with clock, Oscillator, 33MHz 68882 FPU	£299.00
AF1200 9Mb with clock, no Oscillator, no FPU Processor	£369.00
AF1200 9Mb with clock, Oscillator, 16MHz 68882 FPU	£415.00
AF1200 9Mb with clock, Oscillator, 20MHz 68882 FPU	£420.00
AF1200 9Mb with clock, Oscillator, 25MHz 68882 FPU	£429.00
AF1200 9Mb with clock, Oscillator, 33MHz 68882 FPU	£439.00

TRACKBALLS



This three button trackball is at its best, fully compatible with Amiga/Atari computers. Supports auto-fire and comes with two year guarantee and key lock function £29.95
Two Colour Shining crystal ball £34.95

CORDLESS INFRA-RED MOUSE

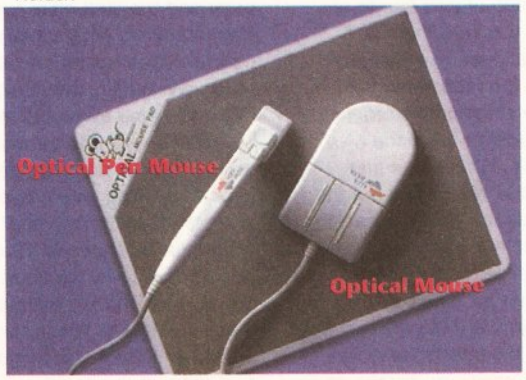
Remote control mouse, long working distance. Long life rechargeable battery. 260 dpi. Price includes hard Mouse Mat.

£45.00

OPTICAL MOUSE

This superb 300dpi Optical Mouse with effortless micro switch buttons. Fast smooth and reliable. Price includes Optical Mouse Pad and Holder.

£27.95



OPTICAL PEN MOUSE

A stylish Pen Mouse with quality construction and smooth fast movement. Micro switch buttons. Ideal for DTP, artwork etc. Price includes Optical Pad.

£35.95

MEGA MOUSE

This 290dpi high resolution Opto-Mechanical Mouse, top quality construction will ensure rapid and smooth movement. With micro switch buttons. A gold award winner in Amiga Format.
Mouse only £10.95
Mouse with hard mat and mouse holder £14.95

GASTEINER 400DPI MOUSE



£14.95

The Gasteiner Pledge

We will beat any nationally advertised price.

(while stocks last)

THE NEW 256,000 COLOUR HAND SCANNER FOR AMIGA

Powerful Colour image Processing Tools for the Office or Home Environment.
No longer a "Professional Task" to scan high quality images.

Software features:

- ★ Easy to learn and use intuitive user interface.
- ★ Real-Time scanning display on screen.
- ★ Supports 256,000 colours and 64 greys for Amiga 1200 and 4000 with new AGA chip sets.
- ★ Supports 4,096 colours, 16 greys, dithered colour and black & white capabilities for all Amiga models.
- ★ Image size is limited only by the amount of RAM available.
- ★ Memory requested does not have to be Chip RAM.
- ★ Full multi-tasking with all Amiga Computers.
- ★ Intelligent maximum scanning length indication.
- ★ Imports/Exports IFF file formats.

System requirements:

- ★ For all Amiga models with a monitor or compatible TV set, 1 megabyte of RAM and a floppy drive.
- ★ More memory and hard disk are recommended but not required.
- ★ Compatible with Amiga WB 1.3 and higher (WB 3.0 also supported).
- ★ Any painting, publishing and OCR programs that load IFF files. Examples:- Deluxe Paint, Professional Page, Page Stream, Saxon Publishers, Mgraph OCR.

PRICE £299

Hardware features:

- ★ Easy intallation, plug in and go in just minutes.
- ★ 256,000 colours, 105mm (4") scanning width.
- ★ Built-in over speed buzzer to prevent scanning too fast.
- ★ With SC (Super Colour). CG (Colour Grey) MG (Monochrome Grey) and D/T (Dithered/text) modes selection switch.
- ★ Selects 50/100/150/200 DPI by resolution selector switch for SC and CG modes.
- ★ Selects 100/200/300/400 DPI by resolution selector switch for MG and D/T modes.
- ★ Metal interface box with printer through port.

All prices are inclusive of VAT
Products advertised represent a small sample of our in-stock range. A complete price list is available on request.

E&OE. Prices subject to change without notice.
Goods subject to availability.
Specifications subject to change without notice.
All Trademarks acknowledged.

Find your local group

There's sure to be a group of Amiga users near you! This issue: the North, Scotland, Wales and overseas.

NORTHEAST

Amiga Artists Club 34 Roundhay Mount, Leeds LS8 4DW. For Amiga artists, musicians and coders. Pirates not welcome. Free. ☎ Kam on 0532 493942, 5-8pm. (AS33)

Amiga Network International 2 monthly club disk, reviews, advice. For info contact Phil or Steve: 434 Denby Dale Rd East, Wakefield, W Yorks WF4 3AE. (AS33)

Amiga Utd Disk based, reviews, competitions, help service, BBS, games and utils. Contact D Collingwood, 14 Linden Close, Hutton Rudley, Yarm, Cleveland TS15 0HX. £10 a year. (AS33)

Artman News, views, reviews, free PD for your articles. Free membership. Send blank disk plus SAE for free disk mag and two free games to A Greenwood, 40 Northwell Gate, Otley, West Yorks LS21 2DN ☎ 0943 466476. (AS33)

Champion PD Club PD at 30p, newsletters, advice, help and more. Membership £10. Contact Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire DL9 3HE. (AS33)

Chester-le-Street 16-Bit Computer Club Exchange advice and swap tips. Meets Mondays from 7.30–9.30pm, Ground floor function suite, The Civic Centre, Newcastle Rd, Chester-le-Street. Contact Peter Mears ☎ 091 385 2939. (AS33)

Club 68000 Competitions, programming, music. Meets Harrogate Leisure Centre, Mondays 6.15pm–10pm. SAE to Chris Hughes, 59 Walton Park, Pannal, Harrogate, N Yorks HG3 1EJ ☎ 0423 891910. (AS33)

Club Amiga £10 a year for PD and a 24-hr helpline (091 385 2627). For more info send SAE to Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear. (AS33)

Club Futura Advice to programmers and beginners. Send SAE for info to G Holland, 16 Hermiston, Monkseaton, Whitley Bay, Tyne & Wear NE25 9AN. (AS33)

Darlington Commodore Users Club News, discounts, cheap PD, advice, newsletter and more. Annual membership £5. Contact S Wheatley, 1 Ruby St, Darlington, Co Durham DL3 0EN. (AS33)

FST Amiga Club Bi-monthly newsletter, all types of activities. For £15 membership you receive one free commercial game plus one PD disk plus 11 further PD disks, one per month. Contact Tel or John, 17 Grasmere Close, Penistone, Sheffield, Yorks S30 6HP. (AS33)

Harley's PD Swaparama PD swapping by mail. Contact G Varney, 140 Weston Drive, Otely, West Yorks LS21 2DJ ☎ 0943 466896. (AS33)

Nothing But AMOS Monthly disk magazine – £2.50 – news, reviews, previews, tips & cheats. Contact Neil Wright 39, Riding Dene, Mickley, Northumberland, NEA3 7DL ☎ 0661 842292. (AS35)

Pennine Amiga Club Free membership, free advice and a newsletter. Contact Neville Armstrong, 26 Spencer Street, Keighley, West Yorkshire BD21 2BU ☎ 0535 609263. (AS33)

Software City Swapping, competitions, club magazine. Membership £8. Contact N Richards, 9 Hollis Close, Manor Estate Farm, Rawmarsh, Rotherham, South Yorkshire S62 7LX ☎ 0709 526092. (AS33)

Steel PD, cheats, ideas, music, art, programming, hardware mods. Free membership (postal only). Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB. (AS33)

The Amiga Club Monthly newsletter, competitions, software exchange, huge PD library, cheats, tips, reviews. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR. Membership £10 life plus two free games and DCopy. (AS33)

The Amiga Studio Friendly, helpful advice for serious users of the Amiga. Monthly newsletter, PD library, free loan of equipment to members, bar. Meets 7pm Tuesdays, Mitchells Club, Scotia Road, Tunstall. Contact Dave Rose ☎ 0782 815589. (AS33)

Wardray Hern Consortium User group for Amiga and possibly others. Membership fees to be discussed and incurred. PD library to be set up. Also Hern connection – worldwide contacts wanted. SAE and disk to WardCon info, (AS) Warren Hardy, 21 Stockfield Ave, Fenham, Newcastle upon Tyne NE5 2DX. (AS33)

Warpdrive Help-line, PD library, bi-monthly disk mag, free drinks, competitions and infosheet. £15 per year. Contact B Scales, 110 Burton Ave, Balby, Doncaster DN4 8BB ☎ 0302 859715. (AS33)

NORTHWEST

Allbit Computer Club General hints and tips, advice, competitions, draws, shop. Meet at The Earle of Crewe, 7.15–10.30pm. Contact Glyn or Mick, 0270 666277. Membership £2. (AS33)

Amiga Users Group Part 2 Advice, technical support, BBS, PD library, tuition, etc. Contact Andy Wilkinson, 25 Glen Eldon Road, Lytham St Annes, Lancashire FY8 2AX ☎ 0253 724607. Free membership. (AS33)

Blackburn Amiga Users Group Software/hardware help, public domain, exchange of information. Meets 7.15pm every Thursday, Room 3, Audley Sports Centre. Contact Eric Hayes, 9 Observatory Road, Blackburn, Lancashire BB2 3HE ☎ 0254 675625. (AS35)

Computeque From beginner to advanced user. Meets 7.45pm–10.30 pm every Tuesday at Inskip Meeting Hall, Ashurst, Skelmersdale, Lancs. Contact Steve Lalley ☎ 0695 31378. Half year membership £2.50 children, £3 adults (AS33)

Fylde Computer Club All aspects of computing. Meets 7pm, Lostock Gardens Community Centre, 2nd and 4th Wednesday of month. £15 per year, 50p on door. Contact Colin Biss, 90 The Esplanade, Fleetwood, Lancs FY7 7BQ ☎ 0253 772502. (AS33)

Hyndburn Amiga Users Club Tuition, advice, PD, and more. Meets Mondays 7pm, at the Canine Club, Accrington (£1 on the door). Contact Nigel Rigby, 7 Brecon Avenue, Oswaldtwistle, Lancashire BB5 4QS ☎ 0254 395289. (AS33)

New Hall Amiga Users Club Games, graphics, music, Workbench programming. Meets 7pm every Tuesday, New Hall Social Club, 104 Bury Rd, Dawtenstall. Membership £5 per year, under 16s not allowed. Contact Bill Grundy, 115 Stanley St, Accrington, Lancs. ☎ 0254 385365. (AS33)

SCOTLAND

Amiga Helpline Software/hardware help service, free access to PD, DTP fonts and clip-art, plus general chit-chat. Send stamp for details. Contact Gordon Keenan, Amiga Helpline, 6 Skirsa Square, Glasgow G23. Membership £20 per year. (AS33)

Angus Amiga CDTV club Contact J Robertson, 22a High St, Brechin, Angus DD9 6ER ☎ 0356 623072. Review software, discuss anything Amiga. Free membership. (AS33)

Edinburgh Amiga Group Membership £5, inc free advice and PD. SAE to Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE. (AS33)

Lothian Amiga Users Group Advice and help in buying hardware, software etc, group buying, dealers' circulars welcome. Membership free. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR ☎ 0506 630509. (AS33)

Perth and District Amateur Computer Society General advice, talks, Amiga PD. Meetings third Tuesday in every month, 8pm. Membership £6 or free for under 16s. Contact Alastair MacPherson 137 Glasgow Rd, Perth. (AS33)

Redburn Computer Users Group Help, ideas, PC, graphics and business. Meets every second Wednesday 6.30pm to 9.30pm. Contact Ruby Anderson ☎ 0294 313624. (AS33)

Tay-Soft PD Club Non-profit-making postal PD, advice, disk newsletter, helpline 6–10.30pm. Contact Dave Thornton, 46 Balmerino Road, Dundee DD4 8RR ☎ 0382 505437. Membership £2.50 (free Utils disk on joining). (AS33)

WALES

Amiga Maniacs Help Graphics, sound, WB, programming, help. Beginners welcome. Free membership (by post). Contact Johnny, 8 Tan-y-Grais, Caernarfon Rd, Bangor LL57 4SD. (AS34)

Amiga Navigation Contact Dave Thomas 4a, Allister St, Neath, W Glamorgan. PD, advice, even small repairs and social evenings. Weds 7–9pm. Membership £10 per year. (AS34)

Bloomfield Video and Computing Beginners, video techniques. Meetings at Bloomfield Community Centre, Narberth, 7.30pm alternate Tuesdays. Membership £5. Contact Mrs Beryl Hughes, Nashville, 50 Glynderi, Carmarthen, Dyfed SA31 2EX ☎ 0267 237522. (AS34)

Blue Bedlam disk-based magazine with variety, news, views, games, etc. Contact Michale Grant, 48 Gills Avenue, Cwrt-y-gollen, Crickhowell, Powys, Wales NPS 1TG. (AS35)

ShieldSoft PD, CLI help, AMOS help, newcomers welcome. 26 Doren Avenue, Rhyl, Clwyd LL18 4LE, ☎ 0745 134 3044. Membership free. (AS34)

Sols (Amiga) BASIC and AMOS. 26 Doren Avenue, Rhyl, Clwyd LU8 4LE. ☎ 0745 343044. (AS35)

South Wales Club Newsletter, PD library, free newsletter, programs, help and advice. For more info contact D Allen 53 West Avenue, Trecenydd, Caerphilly CF8 2SF. (AS34)

Wrexham District Computer Club PD, library, equipment loan. 10p to join, 50p to get in. Meetings at the Memorial Hall, Wrexham every Thursday, 7–10pm. Contact Paul Evans, 3 Ffordd Elfed, Rhosnesi, Wrexham, Clwyd LL12 7LU. (AS34)

OVERSEAS

16-32 Micro Programming AMOS, bi-monthly fanzine, PD (Fish → 590). Membership 100FF or £10. Contact F Moreau, 132 rue Jean Follain, 50000 Saint-Lo, France ☎ 315220 02. (AS33)

32-bit ware Devoted to A1200 and A4000 – PD, coverage of new software for these machines, games help. Meet on Hurricane BBS, mostly Saturday nights. Contact 32-bit ware, Ekorrstigen 10, 147 63 Tumba, Sweden. (AS33)

Amiga Addicts Newsletter and open nights. For info SAE to A Minnock, Clonkelly, Binn, Co Offaly, Ireland. (AS33)

Amiga Athens club PD swaps, tips, cheats etc. Free membership, just new PD or tips in exchange for our services. Contact Stefanos Papamichael, 9 Derfeld Rd, Patisia, 11144 Athens, Greece ☎ 01/2027973. (AS33)

Amiga Pros User Group, Greece Concentrates on promotion of the Amiga in Greece, plus DTP, AMOS and graphics. Contact Stefanos Siopoulos, 52 Silivrias

GETTING YOURSELF LISTED – AN IMPORTANT NOTE

Your user group will be listed here free of charge for six issues, then deleted to prevent defunct groups being listed indefinitely. The number at the end of each entry is the last issue in which that entry will be included. If you want your group's entry left in, just send in this coupon again a couple of issues in advance. PD libraries are now listed at the end of the PD section – this issue, page 102.

If you run a user group which isn't listed on this page, fill in the form below for your free entry. Send it to *Amiga Shopper* User Groups List, 30 Monmouth Street, Bath BA1 2BW. We reserve the right to refuse entries.

AS30

Group name ....

Type of activities ....

....

Place of meetings ....

Time of meetings ....

Contact name ....

Contact telephone number ....

Contact address ....

....

....

Membership fee ....

Str., N. Smyrni 17123, Athens, Greece, ☎ 01/9349963. Membership free. (AS33)

AMOS Users join The MR AMOS Club, winnersof Europress Software's AMOS programming competition. Send £2.50 for issue one of disk mag. Contact Brian Bell, 8 Magnolia Park, Dunmurry, Belfast BT17 0DS. (AS35)

AUGFL vzw Bi-monthly newsletter, PD, distribution & support of Belgian programs, registration-site, tips. 750 Bfr/year membership. Contact Lieven Lema, Meesberg 13, 3220 Holsbeek, Belgium. (AS33)

City Centre Amiga Group All-round user group, esp. PD, DTP, help for new users. Meet Ormond Hotel, 2–6pm. Contact Patrick Chapman, 70 Ballygall Crescent, Finglas East, Dublin II, Ireland, ☎ 345035. Membership £3 per week. (AS33)

Comp-U-Pal Australian group for users in the outback. Newsletter, helpline, PD library. Membership A$24. Comp-U-Pal, 116 Macarthur Street, Sale, Victoria 3850, Australia. (AS33)

Danish AMOS user group Bimonthly disk mag, £2 each, PD library. SAE for info. Contact Tom Poulsen, Stenmøllen 28, 2640 Hedehúsene, DK Denmark ☎ 42 16 54 84. (AS33)

Gibraltar Amiga Users Club PD library, monthly newsletter, disk magazine, competitions, regular meetings (in the John Macintosh Hall). Membership from £6 per year. Contact David Winder, 7 Lime Tree Lodge, Montagu Gardens, Gibraltar ☎ 010 350 79918. (AS33)

HTS (Malta) Free membership. Contact K Cassar, Block 1 Flat, 6 H E Hal-Tmiem, Zejtun ZTN07 Malta ☎ 674023. (AS33)

Japan Amiga Group Share disks and make Japanese contacts. Contact: Rick Gardaya, PSC 78 Box 3876, APO AP 96326 USA. (AS35)

Malta Amiga Club Contact Zappor, PO Box 39, St Julians, Malta, ☎ 440453 (AS33)

Maritime Amiga Club Maritime computing, interact with seafarers ashore on Amigas. Contact CDR K Osei, GN Ships Refit Office, 51 Rue de la Bretonniere, 50105 Cherbourg, France. ☎ 33 33225447. (AS33)

Navan Computer Club Software reviewing, graphics, business, news and chat. Meet various hotels in Navan, 7.30–9pm. Contact Mark Arnold, Cannistown, Navan, Co Meath, Eire ☎ 046 21078. Membership £6 per year. (AS33)

N Ireland Amiga User Free PD, disk-based mag £2.50 per issue. SAE to Stephen Hamer, 98 Crebilly Rd, Ballymena, Co Antrim BT42 4DS. (AS33)

Northside Amiga Group Lectures by professionals on different Amigas and associated hardware. Member demonstrations on serious software and games. Meets 8pm alternate Mondays, Donamede House, Dublin 13. Contact William Kelling, 10/A Rainsford Avenue, Dublin 8, Ireland ☎ 01 532 807. (AS33)

Royal Air Force Amiga Club Loads of new PD. Meets 1900-2000 hours, Thursdays, Blk 35, Room 40. Send 10 of your PD disks plus 2 x 24p stamps to Stan Young, HMF RAF Laarbruch, BFPO 43 ☎ 445. (AS33)

Singapore Sling Promotes Amiga in Singapore. Meet Eugenia Court, every Sunday 1pm. Contact Eric Chai ML, Block 4 #14-413, Pandan Valley, Singapore 2159, ☎ 65 4680630. Membership free. (AS33)

Software Exchange Club Free help and advice. Contact Michael Lacey, Fern's Post Office, Enniscorthy, Co. Wexford, Republic of Ireland. (AS35)

Worldwide PD Club Over 4,100 disks – send blank disk and SAE for catalogue. Membership DM60 a year or DM6 a month. Contact Dave White, Berliner Str 39, 40880 Ratingen 1, Germany ☎ 02102 499729 (Germany). (AS35)

Note: this list is provided as a free service for amateur, non-profit-making user groups. *Amiga Shopper* does not endorse or recommend any particular group and cannot be held responsible for any losses or problems you might suffer.

Discover the World of Amiga this autumn.

Two years ago Future Publishing – publisher of this very magazine – hosted the World of Commodore. Last year the show grew to become the Future Entertainment Show, and now this year it's back, incorporating a special section: World of Amiga.

At the show you'll find dozens of stands demonstrating hardware and software – and selling at the best prices around. Exhibitors like Gasteiner, Power Computing, Digita and Supra will be showing off their latest products. And of course there will be Commodore, showing its full product range. You might even find a game or two, if you look hard!

The show is at Olympia from November 11th to 14th, and getting a ticket is as easy as picking up the phone – call 051 356 5085. Tickets cost £6.95 and are only available in advance – family tickets admitting two adults and two children cost £24.95. If you book for the 12th you'll get a free ticket for Aladdin!

Last year was a sell-out and thousands were disappointed, so don't delay, ring our credit card hotline today to reserve your tickets.

Don't miss the show of the year – you've never seen anything like it!

AMIGA SHOPPER

The second Future Entertainment Show

Pushing back the boundaries of modern entertainment

It's only words...

If you don't know your passive voice from your inappropriate preposition, Jeff Walker wonders if a computerised grammar checker can be much help.

Ernest Hemingway advised that the most essential gift for a good writer is a built-in shock-proof shit-detector. Every writer who has ever been published has one of these – it is called The Sub-Editor. But if there is one thing guaranteed to push The Sub-Editor's shock absorbers down to the metal it is grammar. Or rather, incorrect grammar.

Published writers are lucky to have such an error corrector, but if they take it for granted they very soon find themselves looking for another publisher. Similarly, anyone who has a job that involves writing reports, business letters, or even a lot of memos, isn't going to stay in that job very long if they write like what Ernie Wise do.

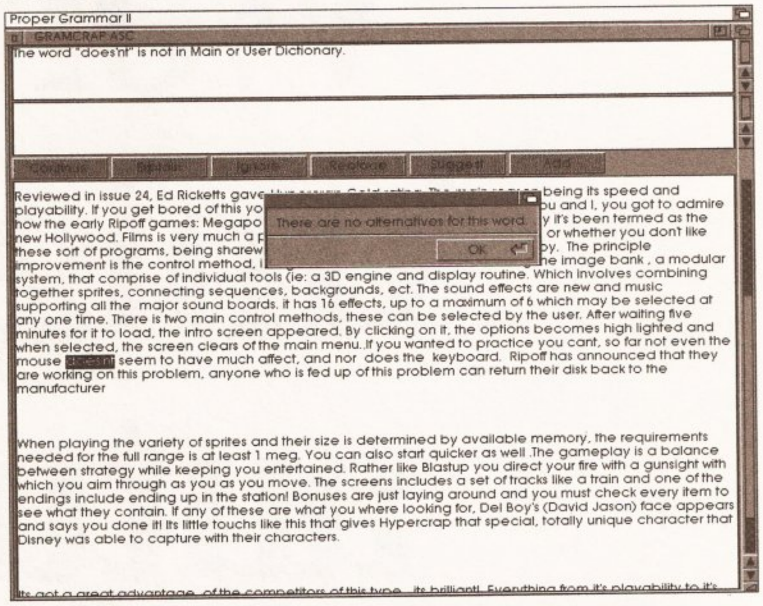
Proper Grammar II, which requires a hard drive, is from the makers of *Pen Pal* and *Final Copy II*, and is an attempt to provide writers with a computerised safety net. The concept is simple. You write your text. You run it through *Proper Grammar II. Proper Grammar II* complains copiously. You correct the mistakes.

RIGHTING WRONGS

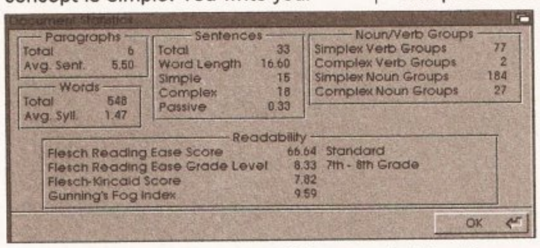
Proper Grammar II checks for a large number of writing errors, including incorrect grammar, incorrect punctuation and incorrect spelling.

It also has checks for highbrow stuff like non-standard expressions and modifiers, weak qualifiers, inappropriate prepositions, noun phrase consistency and open/closed spelling. It can recognise multiple negations and tell you when you have used a hackneyed expression (a cliché), or jargon, or a word that is often misused or overused. It knows all about pronouns and possessives and pretentious phrases. The list goes on. *Proper Grammar II*, it says on the back of the box, takes the guesswork out of good writing by detecting 95% of all writing errors, identifying and correcting embarrassing mistakes, making it a valuable proofreading tool designed to improve writing.

Poppycock! This makes it sound as if you can write any old tosh and then run it through *Proper Grammar II* to knock it into shape. So that's what I did. *Amiga Shopper's* sub-editor, Alex Soboslay, who has a wider experience than me of common writing errors, wrote a short piece of text that is wonderfully wicked, containing hundreds of classic



Proper Grammar II offers no help at all with "does'nt", a very common misplacement of the apostrophe when attaching the contracted form of "not" to the end of the verb. Nor could it work out that "Thats" might be the contraction of "That is" with the apostrophe missing – one of the most common punctuation errors that writers make. If it can't spot these common problems, one has to wonder how useful Proper Grammar II is going to be.



These Readability figures, which are calculated from the statistics above them, are an attempt by our American cousins to bring some objectivity to a highly subjective decision. A load of hogwash, in other words.

FOR EVEN PROPERER GRAMMAR...

ENGLISH GRAMMAR
Author: Collins Cobuild
ISBN: 0 00 370257 X
Publisher: Harper Collins, 77–85 Fulham Palace Road, London W6 8JB
Price: £8.50 (paperback, 486 pages)

While a computerised spelling checker adequately replaces a traditional dictionary for most people's needs, and while an on-line thesaurus can be more convenient to use than Roget's hallowed tome, software grammar checkers have not yet reached the stage where they are able to understand the context of words, and as a consequence tend to make tentative suggestions rather than confident corrections.

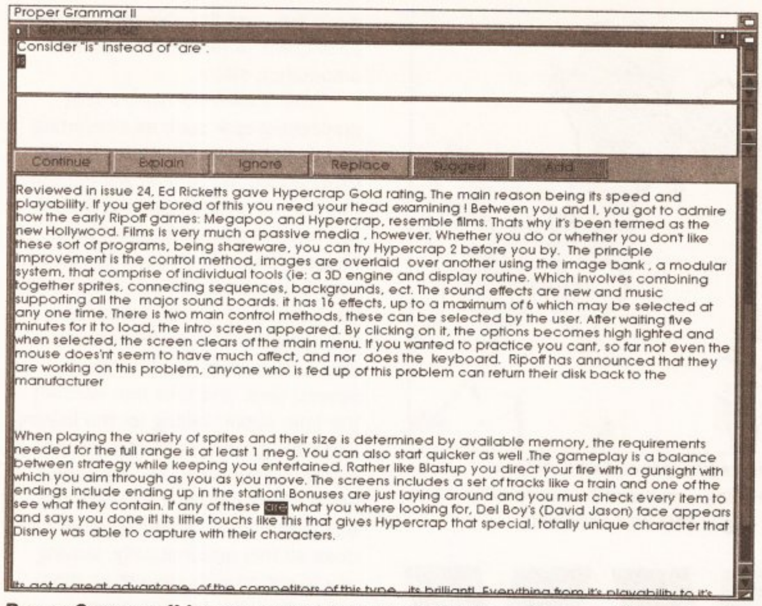
These suggestions can often only be understood by someone who has a fairly good working knowledge of English grammar. Yet software grammar checkers are touted as the easy way for shoddy writers to improve their English. The concept is flawed. Any teacher will tell you that the quickest way to *prevent* someone learning something is to continually find fault with what they are doing. Praise is needed as well as correction, or at least some indication when they have got something right.

Now I'm not suggesting that a software grammar checker should put red ticks down your work and an "A+" at the end, but I am saying that using a software grammar checker as a crutch is possibly the worst thing that anybody interested in writing could do. If your English grammar needs brushing up and you haven't got the time or money to take a course, then buy a book.

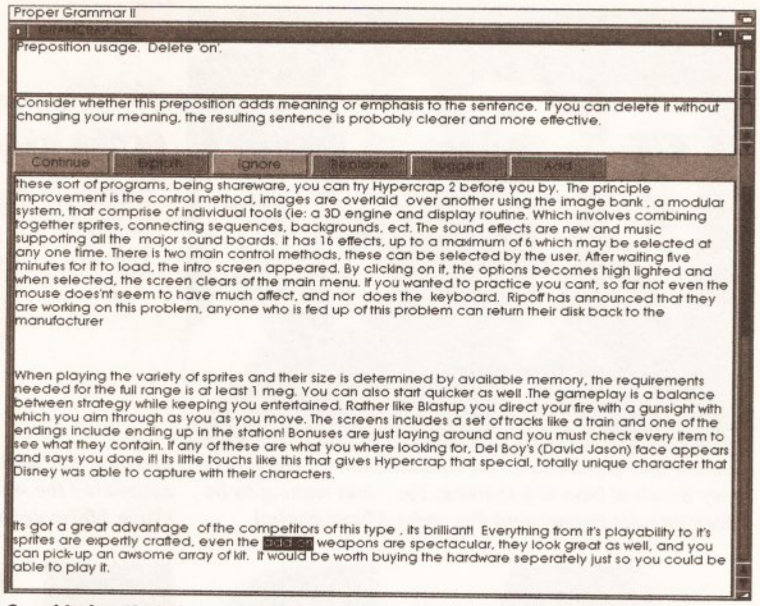
English Grammar, first published in 1990 and now in its third reprint, is produced by Cobuild – the Collins Birmingham University International Language Database – following a detailed study of present-day English. Many millions of words, spoken and written, were gathered into the huge Birmingham Collection of English Texts and analysed, partly by computer and partly by a team of expert compilers. The book attempts to make accurate statements about English as observed in this study. The main patterns of English are picked out and described, and the typical words and phrases found in each pattern are listed.

Although there are no exercises in it, you could work through the book chapter by chapter because it begins with the simple stuff of words and gets progressively more conversational. Thanks to a large glossary of grammatical terms and an excellent index, the book can also be used as a reference for when you are unsure whether it is "who" or "whom", "its" or "it's", "less" or "fewer" and so on and so forth.

The most important point about this book is that it is not stuck in the past. It presents a completely fresh description of the language, concentrating on the *real* patterns of use in today's English, with thousands of spoken and written *real* English examples. ***Jeff Walker***



Proper Grammar II has assumed that "If any of these..." means "If any [one] of these...", whereas it could just as easily mean "If any [number] of these...", so whether "is" or "are" should be used depends on whether "any" should be regarded as singular or plural here. It doesn't bother to explain this. However, it has to be said that if you were a grammatical purist you would probably appreciate being alerted to this particular breach of your rules.



Considering that the word "the" can only precede either a noun, a superlative adjective, a general determiner or a number, and considering that the word "add" can only be used as a verb, Proper Grammar II really should have queried the use of "the add" in this sentence. And considering that the program has missed the sense of the phrase completely, is the general pre-programmed message it gives going to be any help to you?

mistakes. Prose this bad is going to confound all but the very best of sub-editors. I didn't expect too much from *Proper Grammar II.* Even so, I was appalled by its inadequacy.

The first few words of Alex's piece read thus: "Ripoff could'nt of chose a worst time to release ...". *Proper Grammar II* complained about "Ripoff" not being in the dictionary. Fair enough, it's a company name. It complained about "could'nt" not being in the dictionary and couldn't suggest an alternative, the misplaced apostrophe completely throwing it. It sailed right past "of chose", which should properly be "have chosen", and right past "a worst time". For heaven's sake! There cannot be "a" worst time because it implies that there may be other worst times, which is impossible because "worst" is a superlative denoting the highest degree of "worse-ness". There can be only "the" worst time, although in this case the phrase in our text should properly be "a worse time".

It was the same story all the way through the text. To call it a failure would be like calling Hiroshima an explosion. It missed the most glaring errors of usage, and was completely unable to cope with something so common – and so simple – as misplaced apostrophes.

SAME OLD STORY

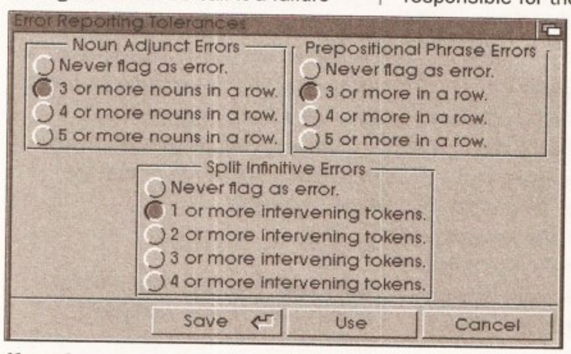
Perhaps this passage was just too much for it. I ran some of my own text through *Proper Grammar II* and it continually suggested that "This main clause may contain a verb in the passive voice". *May* contain? Well does it or doesn't it? How do I know? The brief example given by the program is not much help, and I am advised to used a more direct verb. What's one of those?

Okay, I'm being deliberately obtuse. I know about passive and active voices. And I know that writers who know their job deliberately use the passive voice to vary the sequence of events in a clause – to talk about the event from the point of view of the thing or person affected, and often to deliberately avoid mentioning who or what was responsible for the action. To suggest that the passive voice should never be used "because it can make a document unclear" – which in effect is what *Proper Grammar II* is doing by complaining about every passive verb – is like suggesting you shouldn't cross the street in case you get run over.

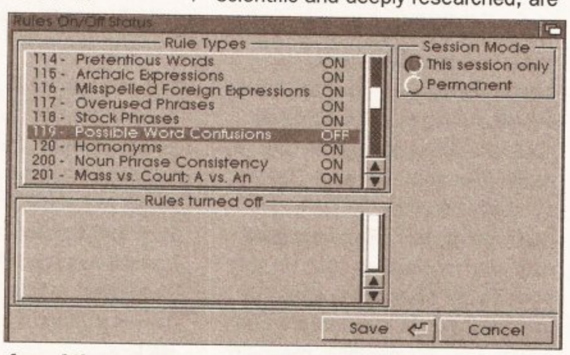
Proper Grammar II makes these stock suggestions – and there are very many more of them – because it is impossible for it to understand the context of a piece of writing, or the meaning of the phrases and sentences it is scanning. It does the best it can, but its best is nowhere near good enough.

At first I suppose it might be a bit of fun to have your Amiga criticise your work, but after the novelty has worn off, *Proper Grammar II* soon becomes a nuisance, then a hindrance. If your grammar needs improving, buy some text books, invest in an English course or two – there are even some computer programs that teach grammar.

Proper Grammar II lives, and dies, by a set of rules that, while scientific and deeply researched, are way too rigid to be applied to a living, creative language. AS



If you know enough about English grammar to be able to intelligently select options from this panel, then you probably don't need Proper Grammar II in the first place.



Any of the program's comprehensive list of grammatical rules can be switched off, helping eliminate irritating messages about "errors" that aren't really there at all.

SHOPPING LIST

Proper Grammar II £39.95
By SoftWood Inc, PO Box 50178, Phoenix, Arizona 85076, USA.

Distributed in the UK by Gordon Harwood Computers, New Street, Alfreton DE55 7BP.
☎ 0733 836781

CHECKOUT PROPER GRAMMAR

Features
●●●●○○○○○○
An impressive list of features hides the fact that the software only makes suggestions, leaving you to work out what to do from the brief explanations.

Documentation
●●●●●●●●○○
The manual is well-presented but of little relevance because the software is so easy to use.

Ease of Use
●●●●●●●●●●
Nothing to it really.

Value for Money
●●●●○○○○○○
A top-class book on English grammar will cost under £10 and will be infinitely more useful.

Overall rating
●●○○○○○○○○
It's like a legless man trying to teach running. He may know the theory, but ask him to show you how to do it...



Here's a nice picture in its unprocessed form – and what a lovely bunch of boys it's showing, too – just waiting to be loaded into Art Department Pro under ARexx control.



And here it is again in its processed form. ARexx automated the whole thing – you don't have to click on a single ADPro gadget to get this sort of result!

AREXX FOR ALL

Link ARexx up to Art Department Professional and you can automate image processing operations. Jason Holborn shows you how to take control.

Having whetted your appetite for power in issue 28's ARexx column, I'm now going to show you the details of how to get ARexx to control your applications via their communication ports. Judging by the many letters that we receive on the subject, it seems obvious that Art Department Professional is the one application that most ARexx users want to automate, so I thought it would be a good idea to start with that program.

So what aspects of *ADPro*, as it's affectionately known, can ARexx automate? Well, the simple answer to that is everything. If there's a single option from within *ADPro* that you can control manually by clicking on gadgets with the mouse, then it can be controlled equally well through an ARexx script. You may be wondering why you would possibly want to automate *ADPro* – after all, it's a fairly straightforward program that doesn't require too much work to use anyway, so there seems little point. Try using *ADPro* to carry out the same image processing task on more than one file, though, and you'll soon come to realise the benefits automation offers.

Take a fairly everyday image processing task such as converting an image between formats. As any experienced *ADPro* user will tell you, this can be a rather tedious task if you have to convert a whole batch of images. Okay, so all you have to do is to select **load,** click on the picture you want, load it in and then save it out using the new file format and Bob's your uncle. But try this on several files, and take into account the time spent waiting for the loading and saving, and you've got yourself a rather tedious task. So why bother when ARexx can do it for you? You can simply write an ARexx script that does all this automatically, leaving you to get on with something more productive (like reading *Amiga Shopper*, for example!). What's more, automating with ARexx can actually speed up the whole process – because you no longer have the hassle of having to click on gadgets manually, ARexx can get on with the job without having to wait for you to tell it what to do.

GIVING ORDERS

Let's start this look at automating *ADPro* with a little demo script – it's not very exciting, but it does illustrate the point. What it does is take the filename of an image from the command line and then load it into *ADPro*, convert it to a greyscale image and then turn it into line art before finally saving it back out to disk with a **.new** extension. Here's

continued on page 85

BEGINNERS START HERE

What is ARexx?

ARexx is a programming language supplied free with all Amigas using version 2 and upwards of Workbench. It is an interpreted language, meaning that each line of an ARexx program is translated into a form the computer understands as it is executed. As a result, ARexx isn't the speediest of languages, but it more than makes up for this by being easy to use.

What are its advantages?

ARexx's principal advantage over other languages is its ability to control other applications that are running on your machine. If such an application has an "ARexx port", then your ARexx program can send commands to it via this port. These commands can simulate mouse movements and clicks, and key-presses, meaning you can automate repetitive tasks that would otherwise require your supervision. For instance, you could write an ARexx program that would load a succession of images into *Art Department*, manipulate each one in turn and then save the results out. While the programs were running, you could wander off and make a cup of tea, or even run another, totally independent program. With ARexx you can take full advantage of the Amiga's multi-tasking abilities.

How do I get it to work?

First, a program called RexxMast must be running – this is the "interpreter", the program that looks at each ARexx instruction in turn and carries out the relevant operations accordingly. You'll find RexxMast in your System drawer. To set it going, just double-click on its icon.

If you're going to be using ARexx a lot, then you'll want RexxMast to run every time you switch your Amiga on. To do this, just drag the icon into your WBStartup drawer.

How do I create ARexx programs?

ARexx programs are entered using a text editor. The program *Ed*, supplied with your Amiga, will do fine. Just open the Shell, type Ed followed by the name of the file you want to create, and type in your program. It's a good idea to add ".rexx" to the end of your ARexx filenames, just to remind you that they are ARexx programs.

Once you've written an ARexx program, you can run it from the Shell by typing:

```
RX name_of_program
```

If, for example, your program was called example.rexx and you'd saved it on your RAM disk, to run it you would type:

```
RX RAM:example.rexx
```


AMIGA REPAIRS
Repairs undertaken to Amiga 500 computers at £44.95 inclusive of parts, labour, VAT and return postage/packing
Commodore registered for full technical support
Computers repaired in the quickest possible time
All machines will be overhauled with a full soak-test to ensure optimum reliability
Entrust your machine to the experts, full 90 day warranty
Repairs to disk drive and keyboard also included (extra charge possible if found to need complete replacement)
Repairs to other Commodore systems undertaken - phone for details
Upgrades and expansions supplied and fitted - phone for details
collection service available
£44.95
To take advantage of this exceptional offer, simply send or hand deliver your computer to our workshop complex, address details below, enclosing this advertisement voucher, payment, fault description, return address, along with your daytime and evening telephone number and we will do the rest.
Should you require Group 4 Security return delivery, simply add £5.00 to the repair charge.
Access
VISA
WTS Electronics Ltd Chaul End Lane Luton Bedfordshire LU4 8EZ Tel 0582 491949 (6 lines)
(We reserve the right to reject machines which, in our opinion, are beyond repair- Normal charge applies)


The Grid & Orbital
FUTURE MUSIC
Discover how two top dance duos get their acts together
Plus...
The latest music-making hardware and software reviewed
Tutorials and how-to guides from the top names in modern music
100s of second-hand bargains advertised every month
FM 10 is at your newsagent on 20 July – don't miss it!
Britain's best-selling music technology magazine

continued from page 82

the script in all its ARexx glory:

```
/* Line Art Demo

 Just feed it the filename of
 an IFF picture...
*/

if ~show(ports,'ADPro') then do
 say 'ADPro is not running!'
 exit
 end

filename = arg(1)

if ~exists(filename) then do
 say filename 'does not exist!'
 exit
 end

address 'ADPro'

'lformat IFF'
'load' filename

say 'Picture loaded... ☛
     now processing...'

'operator COLOR_TO_GRAY'
'operator LINE_ART'

'execute'

filename = insert(filename,'.new')

'sformat IFF'
'save' filename 'IMAGE'

say 'Job done. Picture saved ▼☛
                          as' filename
exit
```

The symbol ☛ means do not type a return – keep typing to the end of the next line. ▼☛ means type a space, then keep typing to the end of the next line.

This listing is fairly straightforward, but I'll quickly go through the important points. The first thing the script does is check to see whether ARexx is actually up and running using the **show(ports,'ADPro')** command that we covered last month. Note the use of the ~ symbol – this is a **NOT** logic operation which reverses the action of the **if....then** structure. Instead of the code being executed within the structure if *ADPro*'s ARexx port is found, reversing the operation causes the code to be executed if the port isn't found. This is needed to check that the user is actually running *ADPro* before running the script. (You'd be surprised how many people run ARexx scripts and forget to run the program that the script is designed to address! I ought to know – I do it all the time myself!)

Once the script knows that *ADPro* is actually up and running, it then reads the filename of the file that *ADPro* is to act upon from the command line using the **arg(1)** function that we covered in *Amiga Shopper* 22 (see page 108 if you missed this issue). Just to be absolutely sure, the script then checks that the file whose name the user has passed to the script actually exists – after all, if the file doesn't exist *ADPro's* going to get pretty stroppy. To check for a file's existence, we use the ARexx **exists()** function. Once again, we use the ~ symbol to reverse the action of the **if...then** control structure so the code within the structure is executed if the file is *not* found. In this particular case, the script throws up a "file not found!" error message and quits. It always pays to code scripts with error checking.

By now, the script knows that everything is hunky-dory, so it establishes a link with *ADPro* using the **Address** function that we discussed in *AS* 28. For the uninitiated, this function simply tells ARexx to open a communications channel between our script and *ADPro* so that we can start giving *ADPro* orders from within our script. We don't really need to check whether this operation was successful, because we checked to see whether the port existed earlier – if something *does* go wrong at this point, then you've got serious problems!

LOAD OF OLD PIXELS!

Once our script has managed to establish a communications link with *ADPro*, it can now start to send the program commands. Obviously the first thing we need to do before *ADPro* can start to strut its stuff is to load an image. Before we can do this, though, *ADPro* needs to be told the format of the image by changing the **load operator** to the one that we want to use. The *ADPro* command to do this is **lformat**, which – not surprisingly – is short for "load format". The **lformat** command doesn't actually load a picture though: all it does is change the type of loader that *ADPro* will use when it pulls the image in.

Now we load the image using the ADPro **Load** command. It's a pretty self-explanatory command that needs only to be fed the filename of the image that it should load. In this particular case, the filename is held in an ARexx variable called **filename**. Obviously our script depends heavily on the user feeding it the filename of a valid IFF file. If you give it the filename of a file that isn't in IFF format, then *ADPro* will complain when it tries to load in a picture. If you want to make absolutely sure that the user is trying to load an IFF picture, you could try encoding the IFF checking script that we covered in *AS* 25 (there, I knew we'd find a use for it eventually!). Finally, our script then puts up a little message telling the user that the file was loaded successfully. (This sort of thing is always a good idea because it keeps the user informed of progress!)

Now let's get down to some image processing! Looking through our script, you may have noticed that both of the image processor operators that we use (**COLOR_TO_GRAY** and **LINE_ART**) aren't called directly. Instead, each is preceded by the instruction **operator**. Because *ADPro* is completely modular, its operators aren't actually built into the main program. As a result, it's necessary to transfer control from *ADPro* to the operators using the **operator** command.

In the case of our script, two operators are required – **COLOR_TO_GRAY** and **LINE_ART**. Although the line art operator does all the hard work, it only works on 8-bit grey scale images, so we need to call the **COLOR_TO_GRAY** operator first to convert colour images to grey scale. Most *ADPro* operators provide some form of control, but I've deliberately picked two of the most straightforward ones just to keep things nice and simple. We'll be moving on to the subject of controlling operators next month.

Finally, the *ADPro* **execute** command is called. It behaves exactly as if someone clicked on the **execute** gadget within *ADPro* itself. If you want the image to be saved out in a format that can be viewed on a standard Amiga, then this should always be called once all image processing tasks have been performed. For a more detailed explanation of how to control the screen format used by *ADPro*, check out the box above.

EXTENSION RELIEF

Once the image has been successfully converted to greyscale and then turned into line art, we need to save it out to disk. You could change the script so that it takes the new filename from either the command line (just use **arg(2)**) or – for a more interactive script — so that it asks the user directly using the ARexx **pull** function. I personally prefer to simply append an extension onto an existing filename because it makes life much easier if you're using a script to convert several images. Our script appends a **.new** extension onto the existing filename using the ARexx **insert()** function, which (in its simplest form) appends the second string to the first.

Finally, our script sets the save format using the *ADPro* **sformat** command and then saves the image out to disk using the **save** command. Note the **IMAGE** parameter tacked onto the end of this command.

Because *ADPro* allows us to save several different types of data with its various different save operators, we need to specify the type that we're interested in. Although this changes between savers, the three most common data types are **RAW** (for *ADPro's* own internal raw image data format), **IMAGE** (for rendered image data) and **SCREEN** (for saving only as much image data as will fit into the currently-defined screen type), whatever it may be. AS

CAN YOU DIG THE SCREEN SCENE?

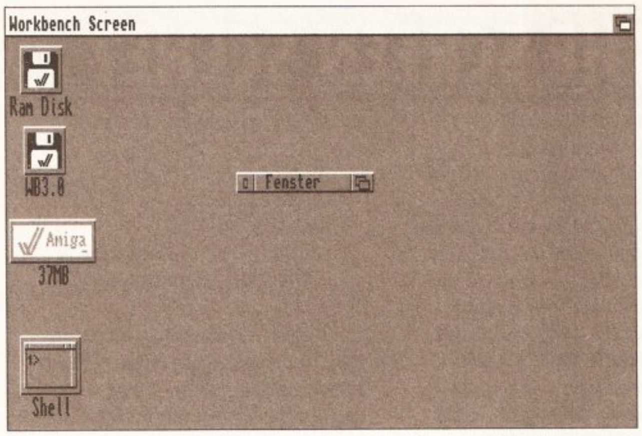
One of the most important panels in *ADPro* is its **Screen Controls** panel, which enables you to specify the type of screen and the number of colours to be used when the raw image data that *ADPro* works upon is rendered into a displayable image. *ADPro* offers a couple of commands that enable these settings to be controlled via ARexx.

The first of these is **RENDER_TYPE.** It enables you to specify the number of colours to be used. Under *ADPro* versions 2.1 or greater, the render type can be set to 2, 4, 8, 16, 32, 64, 128, 256, EHB, HAM, HAM8 or CUST modes. Note that not all of these render types can be displayed on some Amigas. (Standard Amigas can only display up to 32 colours, EHB and HAM modes, although AGA machines are capable of displaying the full range of modes on offer.) To change the render type to AGA HAM8 mode, your script would need to contain the line **RENDER_TYPE HAM8.**

The screen type can also be controlled using the slightly more complicated **SCREEN_TYPE** command. **Screen Type** expects to be fed a number between 0 and 31. This number acts a little like a binary number – each "bit" turns a particular screen attribute on or off. Here's how the number breaks down into its component parts:

HI-RES = 1
INTERLACE = 2
PAL = 4
HORIZONTAL OVERSCAN = 8
VERTICAL OVERSCAN = 16

In order to specify the screen type you want, all you have to do is to add up the numbers that correspond to the screen attributes that you need. To force *ADPro* to use a low-resolution, interlaced screen in PAL format, you would pass a value of **6** (from 2 + 4). Note that the absence of a **1** causes *ADPro* to switch to the default low-resolution mode.



The Shell Icon – a gateway into the marvellous world of AmigaDOS. Just double-click on it to gain access.

AMIGADOS – A POTTED HISTORY

In the very early days, AmigaDOS was hurriedly developed from a system designed for mini-computers and written in BCPL. This caused no end of problems because BCPL is conceptually alien to C, the native environment used to develop the Kickstart operating system and Workbench. The two languages are like chalk and cheese and this led to some uncomfortable compromises.

The original disk filing system – the part that laid down information on the disks – was slow and had a tendency to slap data down in an almost random fashion. This meant disks became fragmented very quickly and had a tendency to run slowly and noisily as the operating system retrieved sectors from all over the place. The only part of AmigaDOS to live in ROM was the **dos.library** and even that had to be loaded from disk on early machines.

All this made working with AmigaDOS a slow, tedious and sometimes nerve-racking process.

Introduction to the Shell

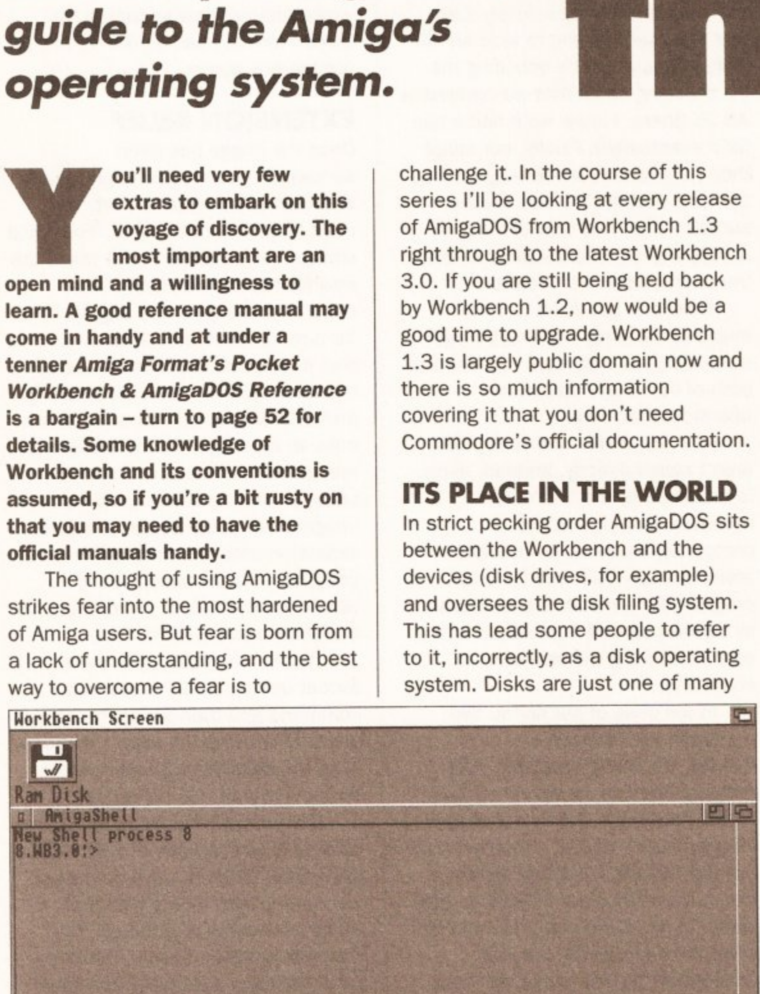
Mark Smiddy kicks off our in-depth beginner's guide to the Amiga's operating system.

You'll need very few extras to embark on this voyage of discovery. The most important are an open mind and a willingness to learn. A good reference manual may come in handy and at under a tenner *Amiga Format's Pocket Workbench & AmigaDOS Reference* is a bargain – turn to page 52 for details. Some knowledge of Workbench and its conventions is assumed, so if you're a bit rusty on that you may need to have the official manuals handy.

The thought of using AmigaDOS strikes fear into the most hardened of Amiga users. But fear is born from a lack of understanding, and the best way to overcome a fear is to challenge it. In the course of this series I'll be looking at every release of AmigaDOS from Workbench 1.3 right through to the latest Workbench 3.0. If you are still being held back by Workbench 1.2, now would be a good time to upgrade. Workbench 1.3 is largely public domain now and there is so much information covering it that you don't need Commodore's official documentation.

ITS PLACE IN THE WORLD

In strict pecking order AmigaDOS sits between the Workbench and the devices (disk drives, for example) and oversees the disk filing system. This has lead some people to refer to it, incorrectly, as a disk operating system. Disks are just one of many



When Shell is opened it displays the current Shell process number and waits for you to do something. Any AmigaDOS commands you enter will be run.

TABLE 1: COMMANDS

Here we show some of the more useful AmigaDOS commands, along with their basic usage and details of the kind of arguments, if any, needed.

Command	Function	Required arguments if any
ALIAS	Display current aliases	–
ASSIGN	Display information on directory usage	–
CD	Change or display current directory	"Directory name"
COPY	Copy a file or files	FROM=<source> TO=<dest>
DATE	Display date and time	–
DIR	Get a sorted list of current directory	–
DISKCOPY	Duplicate an AmigaDOS disk	FROM=<dfx:>, TO=<dfx:>
DELETE	Remove a file or empty directory	"File or directory name"
ED	Start full-screen text editor	"File name"
ENDSHELL	Terminate the current Shell process	–
FORMAT	Format a new disk	DRIVE=<dfx:> NAME="Text"
INFO	Information on current devices	–
LIST	Detailed list of current directory	–
MAKEDIR	Create a new sub-directory	"Directory name"
NEWSHELL	Start a new Shell process	–
RESIDENT	Make a disk-loaded command RAM resident	"Command name"
VERSION	Give current version number information	–

In those early days, AmigaDOS did little more than handle the disk filing system and was a less than friendly environment to work in. The command-line interface was dreadful, mainly because there was no provision for the most rudimentary line editing. If you made a mistake you had two choices: delete any extra characters or re-type the line from scratch. AmigaDOS commands could get quite lengthy and this was regarded as highly unacceptable.

The first major change was heralded by the release of Workbench 1.3. This added a number of new commands and improved some others, a better filing system for hard disks and an improved command-line interface, called the Shell.

AmigaDOS 2 saw its first accessible public release in the A500 Plus. Most got a taste of the new system from the vastly improved Workbench, and few realised what improvements had been made to the system software running under the surface. At the heart of all this was a new AmigaDOS with many commands now built into the ROM making it much easier to use and more powerful too.

The radical changes lost pace with the almost simultaneous release of Workbench 2.1 and 3. Workbench 2.1 is the AmigaDOS 3 version of the AmigaDOS software running on pre-AGA chips – so for most purposes the two are the same. The major difference between this release and the older versions was localisation of the entire operating system. Also, AmigaDOS running on a Workbench 3 machine gets yet another disk filing system option.

devices handled by the Amiga – others include the serial port and printer, which suggests that DOS is really an acronym for Device Operating System.

AmigaDOS rides on the back of Exec, the Amiga's multi-tasking operating system executive. This means it can do two (or more) jobs at the same time without either knowing about the other's existence. This is only partly true of Workbench, because although you can format (initialise) two or more disks at the same time, Workbench will only copy one group of icons or launch one tool at a time.

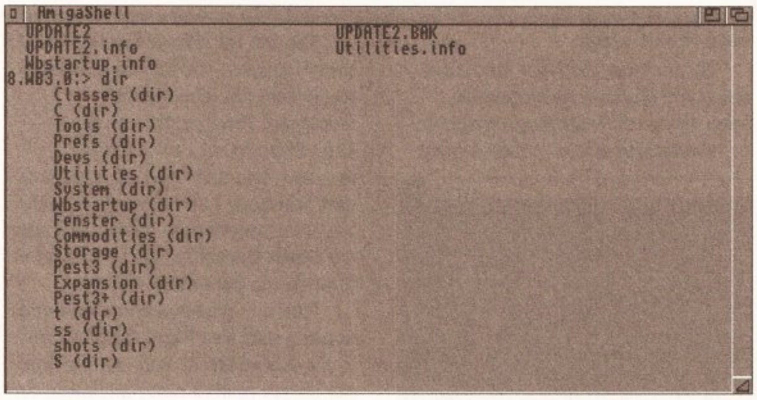
THE POINT OF IT ALL

Purists would argue that once you have a good understanding of AmigaDOS there is no need to use the Workbench. It is a fact that you can do a lot of things with AmigaDOS which you couldn't hope to do from Workbench; but the same is true in reverse. Many everyday tasks such as copying disks and files are more easily performed from Workbench and some developers choose to provide Workbench options that are not available from the AmigaDOS environment. AmigaDOS and Workbench complement each other perfectly and a good overall understanding of both will ensure you get the best from your machine.

THE DEEP END

Most AmigaDOS tutorials ease you in slowly and that approach has its advantages, but there is also something to be said for just diving straight in, and this is the approach we're going to take here.

There are two ways to reach AmigaDOS, but since this series will include Workbench 1.3, we'll take the direct route. (The other is via Workbench 2's **Execute** command.) AmigaDOS is all text-based, so if you are working on a monitor you should set your screen preferences to 80 columns; otherwise set them to 60. Workbench 2/3 users can identify this mode as PAL or NTSC Hi Res in the **ScreenMode** Preferences tool.



Commands such as DIR can generate a lot of output. This listing has been paused part way through to prevent it scrolling off the top of the screen.

Boot Workbench from a copy of the original floppy (do not start from hard disk) and open the icon marked **Shell.** You'll find that Shell is located in the main Workbench window. The Shell program will open with a message to the effect: "New Shell process *nn*" where "*nn*" is some arbitrary process number. The actual number is not important at this stage – let's assume it was "1". Below that you'll have a small text message that says something like this:

```
1.SYS:>
```

Just to complicate matters, the text **SYS** will only appear on 1.3 machines; on later model Amigas, this will be the name of your Workbench disk, so it may read:

```
6.Workbench3.0:>
```

This message is called a prompt. It is AmigaDOS telling you it's ready to process a command.

WHERE'S YOUR PROMPT?

The different prompts can become rather confusing to say the least, so we've adopted the following convention. If the text includes something to enter at your keyboard, it will be preceded by a standard prompt: **1>**. You must not enter this. If AmigaDOS's output is being shown, that will follow immediately on the lines below. AmigaDOS commands are shown in the text as capital letters – **DIR**, **FORMAT**, **LIST** and so on. Letter case is not important to AmigaDOS.

Some commands will generate a lot of text, and rather than us wasting magazine space, we'll indicate the continuation with ellipses "**...**". In most cases, displayed output will be from a typical set-up rather than *exactly* what you should expect, unless stated otherwise. Everyone's disks are different, so don't worry if your screens don't quite mirror the ones shown here.

By now you must be itching to get typing, so that's what I want you to do. Bearing in mind what has just been said about prompts, enter what follows on the next page:

TABLE 2: KEYBOARD SHORTCUTS

Below are the keyboard shortcuts you can use to edit command lines while working in the Shell.

Key(s)	Action
<Up cursor>	Go back one line of history.
<Down cursor>	Go forward one line of history.
<Left cursor>	Move cursor left one position.
<Right cursor>	Move cursor right one position.
<SHIFT-Left curs>	Move to start of line.
<SHIFT-Right curs>	Move to end of line.
<SHIFT-Up curs>	Search back through history (same as **<Ctrl-R>**) – see text
<SHIFT-Down curs>	Delete current line (as **<Ctrl-X>**)
<Backspace>	Delete character left of cursor.
<Del>	Delete character under the cursor.
<Ctrl-A>	Move cursor to start of line.
<Ctrl-B>	Go to the last command in the buffer.
<Ctrl-C>	Abort current command.*
<Ctrl-D>	Abort current script.*
<Ctrl-E>	Send break-E to current command.*
<Ctrl-F>	Send break-F to current command.*
<Ctrl-G>	Send a "bell" to the terminal.
<Ctrl-H>	Same as **<Backspace>** key
<Ctrl-i>	Same as **<Tab>**
<Ctrl-J>	Line feed. *Not* the same as **<Return>**.
<Ctrl-K>	Delete from the cursor to end of line.
<Ctrl-L>	Clears current Shell/CLI window.
<Ctrl-M>	Perform a **<RETURN>**
<Ctrl-Q>	Pause a scrolling display.*
<Ctrl-R>	Finds a line based on current line.
<Ctrl-S>	Restart a scrolling display.*
<Ctrl-U>	Delete from cursor to start.
<Ctrl-W>	Move cursor to next tab stop.
<Ctrl-X>	Delete whole of line.
<Ctrl-Z>	Move cursor to end of line.
<Ctrl-\>	Marks end of file (and closes Shell**)
<Left-Amiga-C>	Copy marked text to the clipboard.**
<Left-Amiga-V>	Paste text from the clipboard.**

* Running commands or scripts only
** Shell 2 and higher.

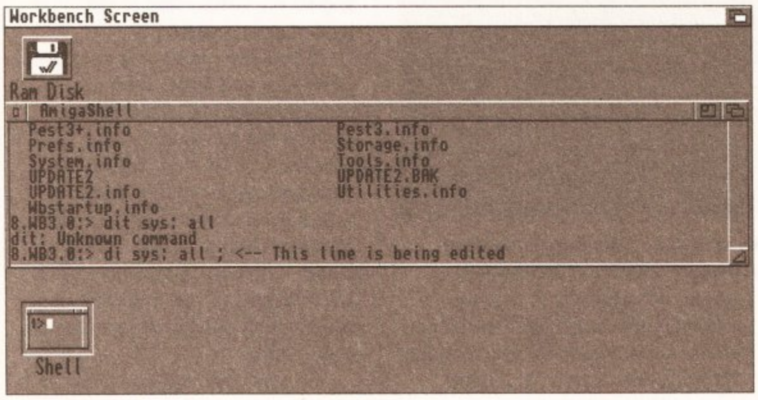
```
1>DIR SYS: ALL
```

You'll see what I mean about a lot of output. You can also get a sense of how slow AmigaDOS disks can be, unless your machine is fitted with a hard disk. If you are still working with your hard disk, stop now. Boot Workbench from a *backup* (it's very important to use a backup) of the original floppy disk and work from that – it's all too easy to make a simple mistake and wipe all the information your hard disk.

Table 1 on page 86 lists some of the common AmigaDOS commands. Pick a few out (ones that don't require arguments) and enter them, just to see what happens. If you make a spelling mistake, AmigaDOS will complain. For instance, enter:

```
1>DIT SYS: ALL
```

AmigaDOS will reply:



Even if you make a mistake, Shell will allow you to go back to the line and edit it afterwards. A press of the <up cursor> key is all it takes to get it back.

```
DIT: Unknown command
```

Although AmigaDOS gives you an error message, nothing more serious happens. You cannot hurt anything by experimenting so long as you are careful to avoid commands that are potentially disastrous: **DELETE** and especially **FORMAT** are ones to avoid at this stage.

By the time you have entered a few commands you will probably have made a few spelling mistakes or "syntactical errors". Shell's most important feature – and the essential one to learn at the outset – is the command editing and history. Table 2 contains a full list of the keyboard shortcuts; it is provided here in full detail for you to cut out and keep. To finish off this month we'll examine some of the simple and more useful facilities of Shell's command editing.

Tap the **Up Cursor** key and watch what happens: the last command you entered is recalled and displayed. Tap it again and the second from last command is recalled. You can keep on doing this until you have been through all your previous commands. As you'd expect the **Down Cursor** moves you *forward* through the command history.

Pick any previous command and use the **Left** and **Right Cursor** keys to move through it. You can position the cursor (a little blob) anywhere on the line with these. You can then insert new letters or, with the **Backspace** key, delete old ones.

Consulting Table 2, you will note the keyboard command **<Ctrl-X>** (this means hold down the X key and the key marked **Ctrl** simultaneously) deletes the entire line. Try that now: hold down the **Ctrl** key and press **X**. Now enter **DIR** and press **<Ctrl-R>**. If you have followed things correctly up to now, the last entry using **DIR** will appear. For example:

```
1>DIR SYS: ALL
```

Also by consulting Table 2, use the editing keys to modify this line until it reads as follows:

```
1>LIST DEVS:
```

then press **<Return>**. This will list the contents of the **Devs** drawer on your Workbench disk. **LIST**, you will notice, is similar to **DIR** in that it displays the contents of a directory. The difference is that **LIST** gives a lot of extra information along with the contents (sizes of files, for example), whereas **DIR** collects the names of all items and shows them as a sorted listing.

A WORD ON LEARNING

AmigaDOS is not so much complex as it is interwoven. In order to learn about "A" you have to appreciate "B", but to understand "B" you need prior knowledge of "A". For this reason I recommend that you read quickly through each article and identify the parts that you know. Next, go back through the parts you don't understand and try to perceive them in context.

You'll build up a picture, piece by piece, just like a jigsaw puzzle – remember that each part has a place, even if it seems somewhat unconnected at any stage. You have to consider that the whole is the sum of the parts, no matter how detached those parts may seem now.

In order to gain an understanding of AmigaDOS you have to examine each aspect in detail and then take a few steps back and study how it fits into the overall picture. But don't expect too much of yourself at this stage – you'll soon get the hang of it.

It's important not to get discouraged. It can all seem very confusing at first – it does to us all – but rest assured that with a bit of time and effort it will all fall into place. You'll be entering Shell commands and writing AmigaDOS scripts with the best of them.

Next month, I'll discuss how the commands I've introduced work in more detail and I'll explain how to get AmigaDOS to teach you. AS

TABLE 3: USEFUL ALIASES

This shows a collection of useful aliases that I use frequently. Just add them to your Shell-startup-file to make them available whenever you boot up. They provide handy shortcuts for many often-used command sequences.

Name	Function	Usage	Example
FN	Short for FileNote	**FN <File> <Label>**	**FN Abc "A file"**
MD	Short for MakeDir	**MD <new directory>**	**MD Directory**
Del	Short version of Delete	**DEL <file, dir or pattern>**	**Del RAM:#? ALL**
TD	Label "this directory"	**TD [label]**	**TD A**
PD	Go to previous dir.	**PD [label]**	**PD A**
Script	Set script bit on a file	**Script <file>**	**Script SPAT**
Safe	Protect a file from deletion	**Safe <file>**	**Safe C:DELETE**
UnSafe	Make a file deletable	**Unsafe <file>**	**UnSafe C:DIR**
QF	Format a disk	**QF <drive number>**	**QF 0**
DC	Backup disk to drive 1.	**DC <dest. drive>**	**DC 0**

AMIGADOS MASTERCLASS

ALIAS is certainly one of the most useful commands in the Shell, but we rarely share good examples with each other. Some people seem to think **ALIAS** is only good to assign a short name to a long command, for example **F = FORMAT, C = COPY** and so on. Commodore aren't much help – the only standard **ALIAS**es supplied with AmigaDOS are **XCOPY**, which merely adds the **CLONE** switch to the standard command, and **CLEAR** to clear the console window – hardly the sort of things you would use daily.

Here is a small selection of useful aliases and descriptions of how to use them. These are best added to the end of your **S:Shell-startup** file, ensuring they are available all the time. Table 3 on this page shows these in use and most should be fairly self-explanatory.

TD and **PD** do need some further clarification: **TD** (This Directory) marks the current directory (with an optional label) and **PD** (Previous Directory) takes you back there. This pair of aliases complement each other and there is no limit to the number of labels you can use. Directories can be anywhere, even on different disks. You can use **ASSIGN** without arguments to see where each label is pointing.

```
ALIAS FN FILENOTE
ALIAS MD MAKEDIR
ALIAS Script PROTECT S:[] +s
ALIAS Safe PROTECT [] -d
ALIAS UnSafe PROTECT [] +d
ALIAS Del DELETE
ALIAS TD ASSIGN DIR_[]: ""
ALIAS PD CD DIR_[]:
ALIAS QF FORMAT DRIVE DF[]: NAME Empty
ALIAS DC DISKCOPY FROM DF[]: TO DF1:
```

AMIGA NEW LOW PRICES!

FROM SILICA SYSTEMS - THE UK's No1 AMIGA SPECIALISTS

NEW! - RACE 'N' CHASE AMIGA 1200 PACK

FREE! ZOOL SOFTWARE PACK - FROM SILICA

ZOOL is the software pack of the year. It includes: Zool, Transwrite, Pinball Dreams and Striker - Value £127.92.

All Amigas from Silica (excluding A600 Standalone and Amiga 4000) include a FREE ZOOL pack as well as GFA Basic and Photon Paint II.

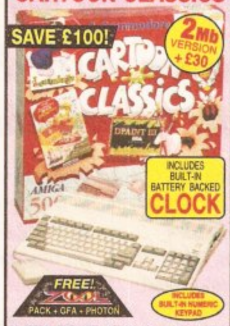


ZOOL .... Platform Title of the year - 97% Amiga Comp - Nov '92	£25.99
TRANSWRITE .... Word Processor and Spell Checker	£49.95
PINBALL DREAMS .... Pinball Simulation - 94% AUI - Sept '92	£25.99
STRIKER .... Soccer Simulation - 94% CU Amiga - June '92	£25.99
ZOOL PACK:	£127.92
GFA BASIC v3.5 .... Powerful Basic Programming Language	£50.00
PHOTON PAINT II .... Powerful Graphics Painting Package	£89.95
TOTAL VALUE:	**£267.87**



PLUS! TOTAL VALUE: £267.87

AMIGA 500PLUS CARTOON CLASSICS



1 YEAR RETURN TO SILICA WARRANTY

FREE DELIVERY

PACK INCLUDES:

- 1Mb AMIGA 500PLUS £299.99
- BUILT-IN 1Mb DRIVE .... -
- A520 TV MODULATOR .... -
- THE SIMPSONS £24.99
- CAPTAIN PLANET £25.99
- LEMMINGS £25.99
- DELUXE PAINT III £79.99

FREE FROM SILICA (See Top Left) £267.87

TOTAL PACK VALUE: £724.82
LESS PACK SAVING: £525.82
SILICA PRICE: £199.00

1Mb RAM	SRP ~~£299~~ £199 INC VAT - AMC 0592
2Mb RAM	SRP ~~£329~~ £229 INC VAT - AMC 0592 + RAM 0520

AMIGA 600 STANDALONE



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

We are pleased to offer the Amiga 600 with Photon Paint II, at a new low Silica price of only £199, a full £100 saving off the previous price.

PACK INCLUDES:

- 1Mb AMIGA 600 .... £199.99
- BUILT-IN 1Mb DRIVE .... -
- BUILT-IN TV MODULATOR .... -

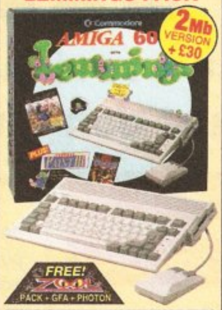
PLUS! FREE FROM SILICA:

- PHOTON PAINT II £89.95

TOTAL PACK VALUE: £289.94
LESS PACK SAVING: £90.94
SILICA PRICE: £199.00

1Mb RAM	PREVIOUSLY ~~£299~~ £199 INC VAT - AMC 0625
2Mb RAM	PREVIOUSLY ~~£329~~ £229 INC VAT - AMC 0625 + RAM 0565

AMIGA 600 LEMMINGS PACK



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

PACK INCLUDES:

- 1Mb AMIGA 600, ... £199.99
- BUILT-IN 1Mb DRIVE .... -
- BUILT-IN TV MODULATOR .... -
- DELUXE PAINT III £79.99
- LEMMINGS £25.99

FREE FROM SILICA (See Top Left) £267.87

TOTAL PACK VALUE: £573.84
LESS PACK SAVING: £344.84
SILICA PRICE: £229.00

1Mb RAM	PREVIOUSLY ~~£299~~ £229 INC VAT - AMC 0666
2Mb RAM	PREVIOUSLY ~~£329~~ £259 INC VAT - AMC 0666 + RAM 0565

AMIGA 600 WILD, WEIRD & WICKED



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

PACK INCLUDES:

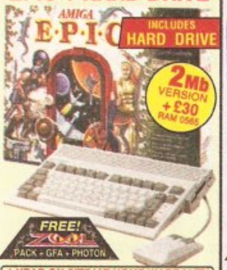
- 1Mb AMIGA 600, ... £199.99
- BUILT-IN 1Mb DRIVE & TV MODULATOR -
- DELUXE PAINT III £79.99
- MICROPROSE GRAND PRIX.. £34.99
- SILLY PUTTY £25.99
- PUSH OVER £25.99

FREE FROM SILICA (See Top Left) £267.87

TOTAL PACK VALUE: £634.82
LESS PACK SAVING: £405.82
SILICA PRICE: £229.00

1Mb RAM	PREVIOUSLY ~~£299~~ £229 INC VAT - AMC 0649
2Mb RAM	PREVIOUSLY ~~£329~~ £259 INC VAT - AMC 0649 + RAM 0565

AMIGA 600HD EPIC + HARD DRIVE



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

PACK INCLUDES:

- 1Mb AMIGA 600 .... £199.99
- BUILT-IN 1Mb DRIVE & TV MODULATOR -
- 20Mb HARD DISK £149.00
- EPIC - A SCI-FI ADVENTURE £29.99
- ROME - ROLE PLAYING ADVENTURE £25.99
- MYTH - STOP THE SPREAD OF EVIL . £19.99
- TRIVIAL PURSUIT - POPULAR QUIZ .. £29.99

FREE FROM SILICA (See Top Left) £267.87

2Mb VERSION +£30 RAM 0565

PACK VALUE: £722.82
PACK SAVING: £423.82
SILICA PRICE: £299.00

1Mb RAM	20Mb HD	£269 INC VAT - AMC 0799
1Mb RAM	30Mb HD	£299 INC VAT - AMC 0829
1Mb RAM	64Mb HD	£349 INC VAT - AMC 0964
1Mb RAM	85Mb HD	£399 INC VAT - AMC 0985

AMIGA 1200 RACE 'N' CHASE



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

- 68020EC Processor
- 14.19MHz Clock Speed
- 32-bit Architecture
- 2Mb Chip RAM
- Amiga DOS v3.0
- Built-in TV Modulator
- 16.8 Million Colours - 256,000 on Screen
- AA Chip Set for Enhanced Graphics
- 1 x 32-Bit CPU/RAM Expansion Slot
- PCMCIA Smart Card Slot takes 512K, 1Mb or 4Mb PC Cards
- 96 Key keyboard with Integral Numeric Keypad
- 2½" Internal IDE Hard Drive Options - see column on right
- 1 Year On-site Warranty
- FREE GIFTS FROM SILICA (See Top Left)

RACE 'N' CHASE: NIGEL MANSELL'S WORLD CHAMPIONSHIP + TROLLS. ENHANCED AGA SOFTWARE

NEW! AA CHIPSET

2Mb RAM	RRP ~~£399~~ £299 INC VAT - AMC 1224

AMIGA 1200 RACE 'N' CHASE + HARD DISK

OFFICIAL UPGRADE



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY

Silica offer the Amiga 1200 with a choice of hard drives. These are legal 2.5" hard drives which fit properly, below the metal safety shield. All of Silica's upgrades are approved by Commodore and both the A1200 and hard disk are fully covered by Commodore's official on-site warranty with WANG. Some dealers fit a 3.5" drive to save cost, but remove the safety shield to make it fit. This 3.5" drive invalidates the warranty. Look for the special sticker to ensure that the upgraded A1200 you buy is 2.5" and an official Commodore approved version. CHECK BEFORE YOU BUY!

NEW! AA CHIPSET

2Mb RAM	30Mb HD	£399 INC VAT - AMC 1430
2Mb RAM	64Mb HD	£449 INC VAT - AMC 1464
2Mb RAM	85Mb HD	£499 INC VAT - AMC 1485
2Mb RAM	127Mb HD	£529 INC VAT - AMC 1527
2Mb RAM	209Mb HD	£599 INC VAT - AMC 1609

AMIGA 1500 HOME ACCOUNTS



FREE DELIVERY

1 YEAR RETURN TO SILICA WARRANTY

PACK INCLUDES:

- 1Mb AMIGA 1500 .... £699.99
- 2 x 3½" BUILT-IN 1Mb FLOPPY DRIVES .. -
- EXPANSION SLOTS .... -
- PC COMPATIBILITY .... -
- VIDEO SLOT .... - For enhanced graphics
- PC-XT BRIDGEBOARD SUPPLIED .. £100.00
- PLATINUM WORKS SOFTWARE .... £169.95 Word processor, database, spreadsheet
- PUZZNIC £24.99
- TOKI £24.99
- ELF £24.99
- HOME ACCOUNTS £29.99
- DELUXE PAINT III £79.99
- AMIGA VISION £111.63

FREE FROM SILICA (See Top Left) £267.87

TOTAL PACK VALUE: £1534.39
LESS PACK SAVING: £1135.39
SILICA PRICE: £399.00

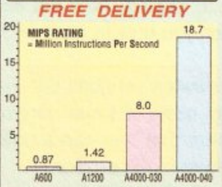
1Mb RAM	RRP ~~£699.99~~ £399 INC VAT - AMB 1500

AMIGA 4000 SPECIFICATIONS



1 YEAR ON SITE/AT HOME WARRANTY ON ALL CONFIGURATIONS

FREE DELIVERY



The A4000 runs at up to **21 times** the speed of the A600.

GRAPHICS :



- 16.7 MILLION COLOURS
- RESOLUTIONS UP TO 1280x512 and 800x600

OPEN ARCHITECTURE:

The A4000 has been designed for maximum flexibility providing plenty of room for memory & peripheral expansion.

- 4x16/32-BIT ZORRO III SLOTS
- 3xPC-AT SLOTS
- 1x24-bit VIDEO SLOT

POWER :

- 1.76Mb 3½" FLOPPY DRIVE

NEW! AA CHIPSET

AMIGA 4000 CONFIGURATIONS

PLUS! FREE FROM SILICA
- Amiga Vision
- Photon Paint II
- GFA Basic

25MHz 68030EC

2Mb RAM	80Mb HD 19ms	£979 INC VAT - AMB 3080
4Mb RAM	120Mb HD 16ms	£1099 INC VAT - AMB 3120
4Mb RAM	214Mb HD 16ms	£1199 INC VAT - AMB 3214
4Mb RAM	245Mb HD 12ms	£1299 INC VAT - AMB 3245
4Mb RAM	340Mb HD 12ms	£1399 INC VAT - AMB 3340
4Mb RAM	540Mb HD 10.5ms	£1699 INC VAT - AMB 3540

25MHz 68040

6Mb RAM	80Mb HD 19ms	£1949 INC VAT - AMB 4080
6Mb RAM	120Mb HD 16ms	£2099 INC VAT - AMB 4120
6Mb RAM	214Mb HD 16ms	£2199 INC VAT - AMB 4214
6Mb RAM	245Mb HD 12ms	£2299 INC VAT - AMB 4245
6Mb RAM	340Mb HD 12ms	£2399 INC VAT - AMB 4340
6Mb RAM	540Mb HD 10.5ms	£2699 INC VAT - AMB 4540

RAM UPGRADES

STANDARD RAM	RAM UPGRADED TO 4Mb	6Mb	10Mb	14Mb	18Mb
2Mb	£100	£150	£300	£450	£600
4Mb	-	£50	£200	£350	£500
6Mb	-	-	£150	£300	£450

PRICES INCLUDE VAT & FREE FITTING AT TIME OF AMIGA 4000 PURCHASE. IF UPGRADE IS NOT DONE AT TIME OF PURCHASE, A FITTING CHARGE OF £34.95 (UPG 0900) IS PAYABLE.

CDTV ADD-ON FOR A500 or A500PLUS



FREE FROM SILICA:

- Lemmings - Award Winning Title RRP £34.99
- Hutchinsons Encyclopedia CD RRP £29.99
- Sim City - Classic Simulation RRP £29.99
- CDPD - 600 Public Domain Titles RRP £19.99

WORTH NEARLY £115

- Enables your Amiga 500 to run CDTV software
- Plays normal audio CD discs
- Storage capacity equal to 600 floppy disks
- Transfer time 153Kb/second
- Compatible with CD + G and CD + MIDI formats
- Compatible with ISO9660 standard
- Some old A500s need modification - call for details

HALF PRICE CDTV — RRP ~~£349.99~~ £149 INC VAT - CCD 0570

APPROVED

Silica Systems are a fully authorised Amiga dealer. We can upgrade Amiga 600 or 1200's with hard drives, for new or existing owners, without affecting Commodore's official on site warranty. We offer other upgrades and repair service for A500 and A500PLUS computers.

UPGRADES & REPAIRS

- Latest test equipment
- 20 trained technicians
- 1,000s of parts in stock
- FAST, 48 hour service
- We can collect (£5+VAT)
- FREE return courier
- All work guaranteed

CALL FOR A PRICE LIST

ALL PRICES INCLUDE VAT - DELIVERY IS FREE OF CHARGE IN THE UK MAINLAND

080793-1230

SILICA SYSTEMS - THE AMIGA SPECIALISTS

Before you decide when to buy your new Amiga computer, we suggest you think very carefully about WHERE you buy it. Consider what it will be like a few months after buying your Amiga, when you may require additional peripherals or software, or help and advice with your new purchase. And, will the company you buy from contact you with details of new products? At Silica Systems, we ensure that you will have nothing to worry about. We have been established for almost 14 years, we are Amiga specialists and are a Commodore approved dealer. With our unrivalled experience and expertise, we can now claim to meet our customers' requirements with an understanding which is second to none. But don't just take our word for it. Complete and return the coupon now for our latest FREE literature and begin to experience the "Silica Systems Service".

- **COMMODORE APPROVED UPGRADES:** Official Hard Drive upgrades with WANG on-site warranty.
- **FREE OVERNIGHT DELIVERY:** On all hardware orders shipped in the UK mainland.
- **TECHNICAL SUPPORT HELPLINE:** A team of Amiga technical experts will be at your service.
- **PRICE MATCH:** We match competitors on a "Same product - Same price" basis.
- **ESTABLISHED 14 YEARS:** We have a proven track record in professional computer sales.
- **£12 MILLION TURNOVER (with 60 staff):** We are solid, reliable and profitable.
- **BUSINESS + EDUCATION + GOVERNMENT:** Volume discounts are available. **Tel: 081-308 0888.**
- **SHOWROOMS:** We have demonstration and training facilities at all our stores.
- **THE FULL STOCK RANGE:** All of your Amiga requirements are available from one supplier.
- **FREE CATALOGUES:** Will be mailed to you, with special reduced price Amiga offers, as well as details on all Amiga software and peripherals.
- **PAYMENT:** We accept most major credit cards, cash, cheque or monthly terms (APR 29.8% - written quotes on request).

SILICA SYSTEMS

HOT LINE 081-309 1111

SILICA SYSTEMS IS A DIVISION OF PROGIS PLC

MAIL ORDER: Order Lines Open: Mon-Sat 9.00am-6.00pm	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX. No Late Night Opening	**Tel: 081-309 1111** Fax No: 081-308 0608
LONDON SHOP: Opening Hours: Mon-Sat 9.30am-6.00pm	52 Tottenham Court Road, London, W1P 0BA. No Late Night Opening	**Tel: 071-580 4000** Fax No: 071-323 4737
LONDON SHOP: Opening Hours: Mon-Sat 9.30am-7.00pm	Selfridges (Basement Arena), Oxford Street, London, W1A 1AB. Late Night: Thursday - 8pm	**Tel: 071-629 1234** Extension: 3914
SIDCUP SHOP: Opening Hours: Mon-Sat 9.00am-5.30pm	1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX. Late Night: Friday - 7pm	**Tel: 081-302 8811** Fax No: 081-309 0017
ESSEX SHOP: Opening Hours: Mon-Fri 9.30am-5.30pm (Sat 9.00am-6.00pm)	Keddies (2nd Floor), High Street, Southend-on-Sea, Essex, SS1 1LA. Late Night: Thursday - 7pm	**Tel: 0702 468039** Fax No: 0702 468039

To: Silica Systems, AMSHP-1093-104, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

PLEASE SEND A 64 PAGE AMIGA COLOUR CATALOGUE

Mr/Mrs/Miss/Ms: .... Initials: .... Surname: ....

Company Name (if applicable): ....

Address: ....

....

.... Postcode: ....

Tel (Home): .... Tel (Work): ....

Which computer(s), if any, do you own? 104L

Window SHOPPER

In which we review, not windows, but those Amiga-related products that we just don't have room to cover elsewhere in the magazine...

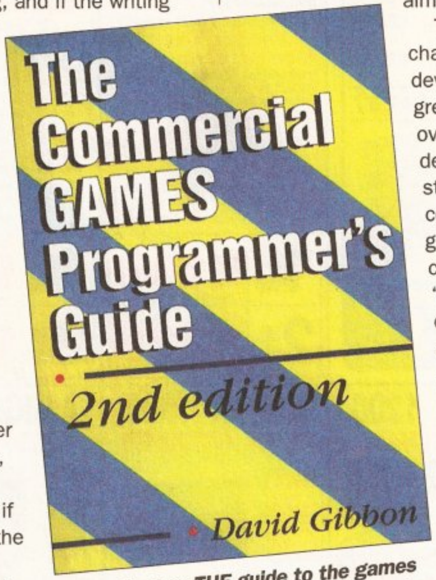
THE COMMERCIAL GAMES PROGRAMMER'S GUIDE – 2nd EDITION

From: Kuma Books Ltd
☎ 0734 844335
ISBN: 07457 00155 8
Price: £9.95 (Paperback, 138 pgs)

The Commercial Games Programmer's Guide by David Gibbon purports to explain the techniques required to produce a saleable commercial game across a range of platforms – Amiga, ST, Spectrum and Amstrad. In reality it conspicuously fails to deliver what is promised.

I read my first book on computers in 1971 and since then have perused many hundreds, if not thousands, of volumes. Gibbon's book is easily the worst that I've had the misfortune to encounter. The style is at its best poor, at its worst illiterate. You get no further than the fourth page before you come across an impenetrable 107-word sentence – and this little gem: "Each instruction is called a mnemonic, pronounced mnemonic which actually means the Greek Goddess of memory". Hmm. Not really much the wiser are we. Besides, just for the record, the Greek goddess of memory was actually Mnemosene.

Now, this may seem to be a trifle on the pedantic side. It is, up to a point. But good programming, like good writing, demands precision and rigorous thinking, and if the writing doesn't come up to scratch how confident can you be about the programming? Worse still, sometimes it is very nearly impossible to make sense of what is being said in the first place.



"Described as THE guide to the games industry", it says. By whom, we wonder.

Despite the howlers that litter this thin volume, it could have redeemed itself if it had supplied the insightful information which the back cover would lead you to believe it contains. This promises a little less than the title *The Commercial Games Programmer's Guide*, saying, "It is not designed to teach you how to program, but to give you tips for programming games in the commercial world." However, it once again fails to deliver. Its advice on the design, coding and marketing of games is so superficial as to be almost worthless.

The first four chapters are devoted to a greatly simplified overview of the development stages of a commercial game. The book contains a "worked example" of the shell of a putative game, "Spacewars". Unfortunately, the example is so perfunctory that it really does nothing to communicate the techniques that lie behind the art of games programming in the real world.

There's a chapter devoted to business planning and cashflow forecasting. Again this contains a paucity of information. Anyone wanting to explore the possibilities of setting up their own business would be well advised not to base their planning on what they can glean from this book. A further chapter deals with marketing games. Like the previous sections, it too contains only a sketchy and superficial overview. Practical advice is conspicuous by its absence.

The final sections of the book are dedicated to providing a range of useful contact addresses for the prospective games programmer. This is the most valuable section of the guide, but it would be difficult to recommend that the aspiring programmer should purchase Gibbon's book solely to obtain this information. You could find most of it equally easily simply by perusing the pages of the various Amiga (and other computer format) magazines which one would assume any budding programmer should already be reading.

Amiga Shopper Verdict: In our opinion a very poor book. If you're after tips and advice on producing saleable computer games, then save yourself a tenner – you won't find the information you're after in the pages of *The Commercial Games Programmer's Guide.* ***(GC)***

WORD POWER v2

From: Steve Rennocks
☎ 0922 414731
Price: £9.95

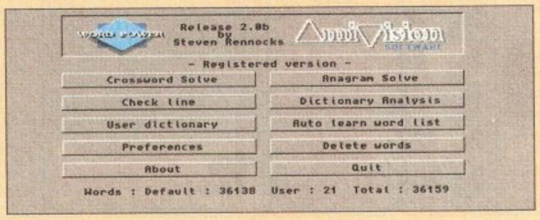
Word Power is a program that will appeal immediately to all those crossword or word puzzle fiends who find that they need a helping hand.

While previous versions of the program were available as shareware, this new and significantly rewritten version is being marketed directly by the author, Steve Rennocks, for £9.95.

At the heart of the package is a dictionary file. This will be a familiar concept to word processor users who use spelling checkers on their copy before it hits the printer to make sure that no typos sneak through unnoticed. *Word Power* v2 doesn't itself include a spelling checker – although the earlier shareware versions did. Feedback from users of those versions told the author that this was a rarely-utilised feature in his product.

The two main functions of *Word Power* are for "solving" crosswords and anagrams. We've put the word *solving* in inverted commas because we wouldn't want to give the impression that the program will puzzle away at cryptic clues for you – that would represent a major breakthrough in the field of machine intelligence and natural language understanding, which would make the author a very wealthy man indeed. Instead, *Word Power* searches through its dictionaries looking for words that will fit a "skeleton" that the user supplies. For example, searching under the crossword option using the skeleton "**s**d**" will offer up the words *shed, shod, skid* and *slid.*

When it comes to sussing out anagrams, you simply enter the jumble of letters that comprise the word to be found. *Word Power* then searches through the loaded dictionaries to see if any words exist that contain the exact match for the supplied letters. Be warned, if you're using a long dictionary file this may take some time.



2 Down: Running this program over text you've typed would only redo WP row. (Two words, 4 and 5)

Included on the *Word Power* disk is a 17,000-word dictionary to get you started. You can replace this with one of your own – provided that it is in ASCII format and that each word starts on a new line. There are a number of suitable dictionaries available as PD – indeed, we gave one away with the *AZSpell* package that was included on the cover disk with *Amiga Shopper* 25. (Here's one for puzzle fans, then: Arrange these words into a sentence: back issues page 108 order can you on.) In addition to this main dictionary, *Word Power* will also search through a further user dictionary that you supply. This gives you the option to create a number of short dictionary files to cover specific subect areas.

It has to be said that the documentation that accompanies *Word Power* is a little sparse, consisting of just three photocopied A4 pages. This shouldn't prove to be too much of a hurdle though – the package is menu-driven and quite intuitive to use.

Amiga Shopper Verdict: A useful program for word puzzle buffs. ***(GC)***

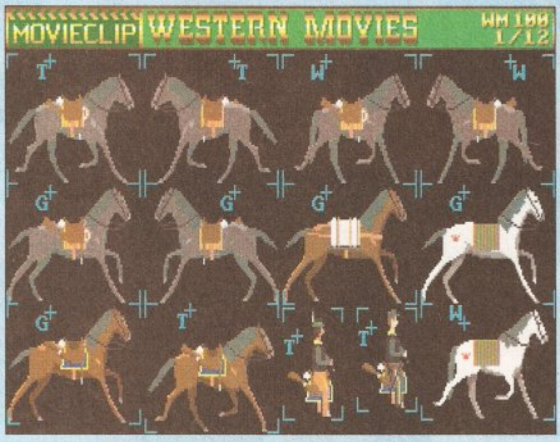
WESTERN MOVIES

From: Diskotech
☎ 05912 242
Price: £15

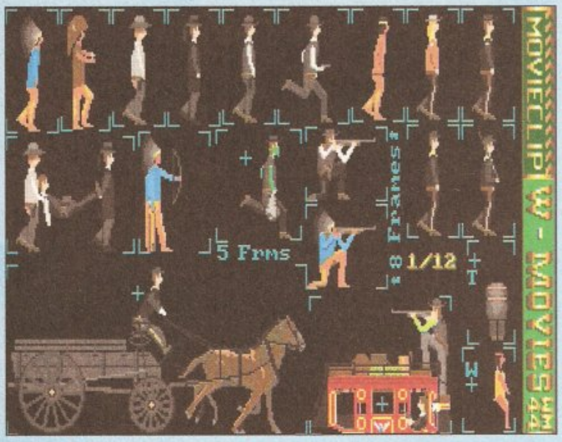
Devotees of the American Wild West will be eager to try out this new collection of clip art from Diskotech. Packed on to this two-disk set are some 2,300 images that recapture the spirit of the Western frontier of the 19th century.

There really are all the images that you'll need to create your own cowboy and Indian epics – anything from the battle of the Little Big Horn, through to your common or garden saloon brawl. However, you've probably already realised from the title "Western Movies" that this is more than just a collection of clip art – it's been cleverly designed to make it easy to produce your own western animations using *Deluxe Paint*. It has to be said that the quality of the different images isn't startlingly high, if they are used individually, but that's not really much of a problem once you start to incorporate them in your own animations.

The images are arranged in groups. For example, six different pictures of a horse galloping are supplied, and when these are combined in an animation sequence you end up with a relatively realistic effect. Cowboys and Indians on saddles are also in the collection, so you won't end up with a riderless horse – you can even hitch-up a stage coach and ride out with your own wagon train.



Hey, I've got an idea. If you really want to program games (see opposite page), just take these images...



... and get them to scroll across your screen while you try to shoot them down! Who needs spaceships, eh?

A range of background pictures have also been supplied on the disks to enable you to give your scenes the feel of the big country.

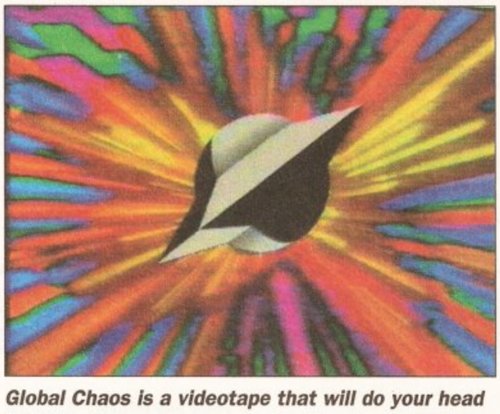
Amiga Shopper Verdict: A value-for-money package that's great fun to use. Budding animators will also find it's an ideal way to hit the animation trail. Thoroughly recommended. ***(GC)***

AMIGA VIDEOS

Global Chaos
By: Hex
From: video shops (HMV, Our Price, etc.)
Price: £10.99

X-MIX-1
By: Studio K7
From: Alternative Image
☎ 0533 440041
Price: £10.99

A couple of recent music/graphics video releases both feature computer graphics and animation heavily, much of it produced on Amigas. One is a British production, the other German, and they're both part of a new wave of music videos which have developed out of the Rave scene – abstract images, lots of fast cutting, multi-layered digital video effects and flashing lights. They feature hard-core, ambient, or techno dancebeats cranked up high to get your heart racing and your legs pumping.



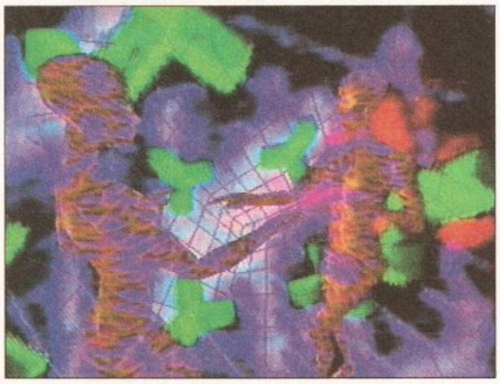
Global Chaos is a videotape that will do your head in! (Our video correspondent writes. In crayon.)

Global Chaos is 60 minutes of pulsating sound and vision from multimedia artists Hex, with sound production by those well-established, heavy-duty mixdoctors ColdCut.

Drawing on a range of artistic sources, from computer games to video scratching, *Global Chaos* claims to be the story of the Alien Sphinx's trip to Earth and the chaos that he finds there. It contains lots of digital video feedback, rotating 3D objects and flashing graphics, and some very nifty Mac-generated 3D dancers and humanoids. There are also good measures of plasma fields, video montages, some old Amiga demos and even a few Real Things animals thrown in, all stirred together with the help of some expensive toys to produce a stream-of-consciousness mix of eclectic graphics and electro-funk.

X-MIX-1 is the German tape, masterminded from Berlin and featuring a variety of European bands and computer graphics designers, each contributing one or more music and visuals tracks, all seamlessly blended into an hour of great-looking animations and graphics montages.

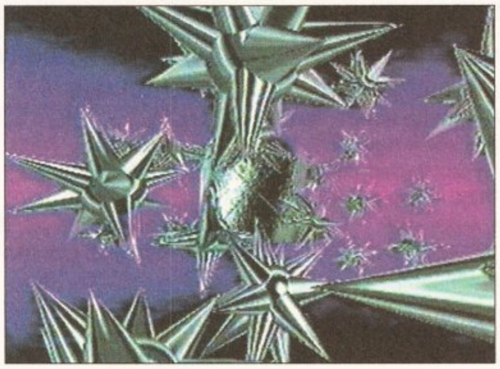
In contrast to Hex's in-your-face approach, *X-MIX-1* is a much more coherent production which will appeal especially to ambient fans, though it has its moments of hardcore and house too. Most of the animation work is of very high quality, with contributions from seven graphics teams – including Ume no Kaisha and Britain's Alternative Image – married with 15 tracks by 10 bands on the MFS label.



X-MIX-1: the kind of stuff that your local MP wants banned and your local pirate radio station plays.

Amiga Shopper Verdict: When it comes right down to it, *Global Chaos* isn't my cup of tea. I quickly got bored with the overbearing digital feedback and rotating objects approach, and I have to admit that I'm not into this style of electro either. But this is art, so I reckon I have no right to say whether you'd like it or not. So here's what *Global Chaos* is: fast, furious and colourful. Over-indulgent perhaps, and a little hyped, but as an audio-visual experience for a nightclub, rave, party or an hour of personal hyperventilation you won't go far wrong with this one if you love techno sounds and crazy visuals.

As for *X-MIX-1*, some of the animations are particularly stunning, often several minutes long with strong action and execution – a far cry from the hackneyed "spin a blobby 3D shape over a colour-cycled Mandlebrot or *Vista* landscape fly-through" approach. They're fresh and interesting and arouse your curiosity as to how some of the graphics were produced.



If your telly's feeling black and white, these two tapes'll put the colour back into it again.

Okay, it's not *Jurassic Park* or *Lawnmower Man*, but as a showcase for Amiga 3D animation this tape is well worth a look, and if you like ambient dance music I think you'll like *X-MIX-1* even more. Euro dance beats meet Euro artists in a single-market Euro spectacular. Well worth a blast.

Gary Whiteley AS

Talking Shop

Have your say, and perhaps win £25 into the bargain! Send your missives to: "Talking Shop", Amiga Shopper, 30 Monmouth Street, Bath, Avon BA1 2BW.

FORCED TO COURT

In the past you have published a number of letters and articles deploring the inefficiency of the on-site maintenance provided by Wang for Commodore. You may think that these troubles are behind us, but I am sad to report that this is not so. I bought an Amiga 4000/040 in November 1992. In March of this year it developed a fault. This was reported at once to Wang. After numerous telephone calls, the engineer finally arrived on 24 June.

Commodore have refused to pay me compensation for this appalling delay and I have been forced to take the matter to court. Is it not sad that a company that makes such a good machine seems careless of the customers upon whom its very survival depends?

R C Walker
Shropshire

Yes, it is sad – that is a ridiculous delay. Let us know how you get on with your court case.

ENJOY PC AND MAC

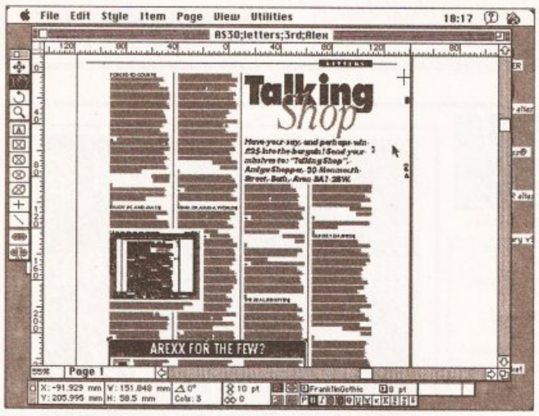
Will you be covering the Amiga CD console? If it all, will you be covering the educational side of it? I hope you will not cover the games side. I read *Amiga Shopper* for serious computing, and I hope I can continue to do so for many years. If you must cover it, please only give updates in the news section.

Finally, when are software companies going to release high-quality software for the Amiga? Why can't we enjoy programs like Quark *XPress*, *WordStar* and the many other programs available for the PC and Mac? People like Digita, Gold Disk and the many others now have the A4000/030 and A1200 to work towards, so I think Amiga users should enjoy PC and Mac-like software from now on. *Pro Page 4* is bug-ridden and *Wordworth 2* is nothing compared to PC word processors. Okay, Amiga software is cheap, but can't companies such as Quark make cut-down versions of their software for people on a tight budget, and have a professional version for professional people?

Steven Browne
Camberley

Don't worry, we will only cover the Amiga CD32 so far as it impacts on the serious side of Amiga computing.

As for the Mac and PC software issue, we're planning a feature on this very subject. So, er, stay tuned.



Here's Quark XPress, running on the Mac. Is there really no software on the Amiga to compare?

KING OF AMIGA WORLD

I've just read through my first issue of *Amiga Shopper* (no. 28) and I must ask myself one question: where have I been for the past 27 issues?

I bought my A500 Plus around two and a half years ago but, like most new users, was not bothered about the techie side of the system. I began playing games, not knowing, not caring about the difference between RAM and HAM. However, I then began to tinker about with Workbench, and created some pictures with *Deluxe Paint III*. When I saw *Amiga Shopper* on the newsagent's shelves, a little voice said to me, "Buy it!"

This was the best £1.95 I ever spent! *Amiga Shopper* is packed to the brim with helpful advice, comments and ideas on how to make the most out of my Amiga. *Amiga Shopper* is the best thing since, oooohhhh, Demi Moore! In fact, I think the great Cliff Ramshaw should be King of Amiga World...!

But, my liege, I would like help. I need to know about BASIC and DTP, since my knowledge in this area is very limited.

Scott Reeves
Leeds

Today is turning out to be okay after all. Thanks for the comments, oh loyal subject.

We cover DTP every month. You'll find a tutorial on fonts in this very issue (page 28), with the concluding part next month. As for BASIC, the variant we support is called AMOS, and a very good variant it is too. Turn to page 68 for this month's column.

THE REAL BENEFITS

Why do so many parents think a computer + educational software = young Einstein? As soon as they find their children playing games the disillusioned parents wail, "Where did we go wrong?" The real benefits of a computer are often overlooked – children get used to manipulating information on a computer (even if it is cheat codes for infinite lives) and they don't grow up with a fear of technology in a world dominated by computer-based information.

Robert Swann
Leeswood

An excellent point – I couldn't agree with you more.

QUICKLY DASHED

I was pleased to see your C programming series. For some time I have toyed with learning C. I already had the DICE compiler and the Commodore Includes, so it was with some confidence of success that I typed in the files listed in issue 28. This confidence was quickly dashed as screen after screen of error messages scrolled up before me. I checked and re-checked my typing. Could it possibly be that the problem was with what was printed? Surely an article aimed at beginners would not be full of mistakes? It is hard enough for a beginner to make a correct listing work, let alone cope with one that is full of bugs.

Stefan Pijanowski
Oundle

There was a printing error in those listings, and indeed other listings within issue 29 and issue 28. My sincere apologies – I can imagine how frustrating it must be. The end of each listing was omitted because of an incompatibility between our fonts and those in our imagesetter. It's sorted now, and you'll find corrections for all the erroneous listings on page 53 of this issue.

The other faults you listed, Stefan, Toby assures me are not problems with his code. He suggests that you must have a very old version of DICE, and that you get hold of a new one via the public domain.

AREXX FOR THE FEW?



£25 WINNER

I have been following the *ARexx For All* column, and a good read it is too. I notice that Jason is now delving into controlling external programs from ARexx – that is, *Art Department Professional*.

Surely the title of the column means that everyone can join in on the action. Lots of average users cannot afford such amazing programs. So, with the advent of lots of public domain software containing ARexx ports, wouldn't it be far more sensible to use one of these programs? They could be put on the cover disk with all the other programs. Surely this could get more people involved in his series.

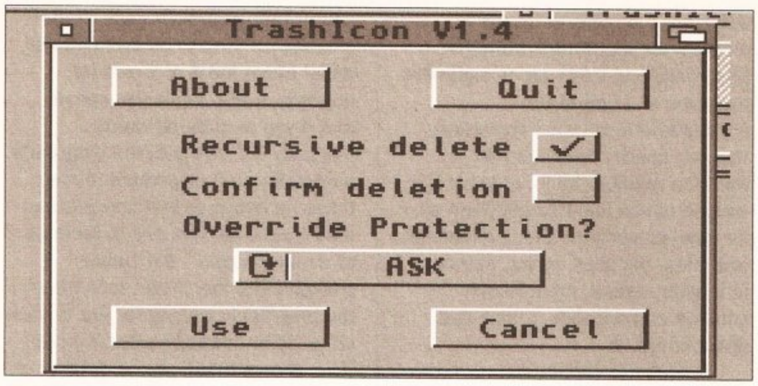
Also, many of the programs reviewed in your Public Domain World section are shareware, with programmers promising upgraded versions to users if they register. If you reviewed registered versions, you could tell people what advantages they would get by registering, which would in turn encourage more authors to release programs as shareware.

Andrew Smith
Tamworth

Both are well-observed points. Expect to see some changes soon.

SOFTWARE for free

If you build a better trashcan, Ian Wrigley will beat a path to your door and test it, along with other low-cost and free software.



Trashicon's options screen: now you can easily delete files just by dragging them on to an icon on the Workbench screen, rather than using the Trashcan.

It's Fish disks 871 to 880 this month (as usual, thanks to Anglia PD for supplying them), plus a look at some of the stuff that's been flooding in over the last month. You know, at this time last year I was full of doom and gloom: the number of new programs seemed to be dropping by the month. Was this the end of Amiga PD and shareware, I asked. Well, fortunately not – now it seems that every month there's more new stuff to look at. Whatever people say, from my perspective it looks like the Amiga is anything but dead – the legions of dedicated programmers and fans of the machine will make sure of that!

Enough philosophising. Before we get on with the disks, I'd just like to make a quick plea to PD houses. Don't send me demos! Well, actually, you can if you want – I enjoy watching them – but don't expect them to be reviewed in this magazine! *Amiga Shopper* reviews no demos and no games – "serious" stuff only, please!

On with the show...

TRASHICON

Fish disk 871

TrashIcon is useful for anyone who's fed up searching around on a crowded disk for the Trashcan icon so that files and drawers can be thrown away. Just double-click on *TrashIcon* and you get a small icon on the Workbench screen, which you can position anywhere you want. Drag a file or drawer on to that icon and it's gone forever – no messing about. There are various options that you can set, such as whether it will ask for confirmation and whether it will recursively delete drawers (that is, remove all their contents as well) or only allow the deletion of empty drawers. If you drag a floppy disk icon on to *TrashIcon*, it will be reformatted – although there is a warning first.

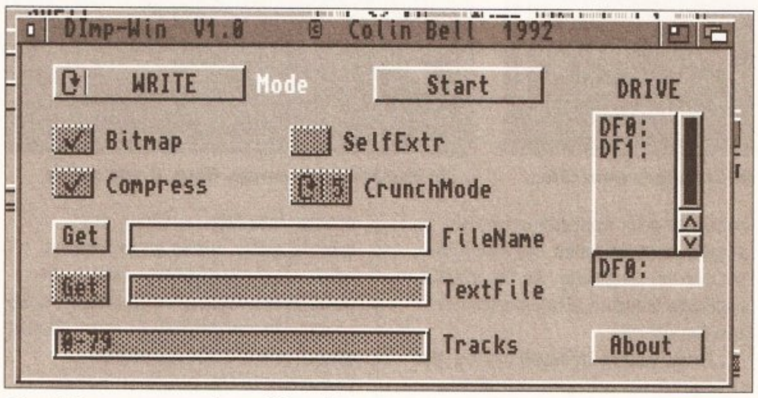
It's small, it's simple, and it's far better than the Trashcan system that the Amiga normally uses. Recommended.

Program rating 9/10

DIMPWIN

Fish disk 871

Sorry, but I have to bring things crashing down to earth again, with a whinge. I really – really – wish that programmers would check their bloody programs before they release them on an unsuspecting public! *DImpWin* looks, on the face of it, to be an excellent program. It consists of the *DImp* program, which is a disk compressor, together with a Workbench front-end (the *Win* bit). *DImp* can do all sorts of natty things: it compresses cylinders of any floppy disk, and can create a self-extracting file which displays a text file as



DimpWin: a compression utility with a nice Workbench front end, promising much, including self-extracting archives. It would be useful if it worked...

RATING THE PROGRAMS

Just to be awkward, I rate the software that I review in two different ways, depending on what it is. Disk magazines, collections of clip art and the like are given a "value for money" rating, since you're essentially paying for one thing, or group of things, on the disk.

Single programs which appear in a collection of others, or programs which I've downloaded from bulletin boards, are given a "program rating", which reflects how good I think they are, taking into account usability, bug-proofness, my own particular (or should that be peculiar?) tastes and so on. Both ratings are out of a maximum possible 10.

BEGINNERS START HERE

What is PD?

PD is a general term which many people incorrectly use to refer to all freely-distributable software. In fact, PD (which stands for Public Domain) software or "freeware" is only one branch of this area; the other main one is shareware.

Essentially, freeware may be copied and used by anyone, although some authors place restrictions such as not allowing a PD library to charge more than a certain amount for the disk.

Shareware, on the other hand, should be treated more like commercial software. Although you are allowed to copy and pass around shareware programs, if you like one then you should pay the requested fee to the author – it's normally around £15 or less, and often entitles you to an upgraded version or a printed manual. Paying your shareware fees encourages software authors to write more programs – and if they don't, the Amiga scene will be a poorer place. Don't think that you're paying money for nothing, either – often hundreds or even thousands of hours of work have gone into creating a program, and it's only right that the programmer receives some reward for his or her work.

The third branch of software that we cover here is called licenseware. This is a form of shareware which is licensed to one (or more) PD libraries. In essence, when you buy a licenseware program you are buying shareware and paying the license fee at the same time. For this reason, you should treat any licenseware that you buy exactly as you would treat a piece of full-price commercial software – don't pass it around to your friends. You've only bought the right to use it yourself.

Can I pass other people copies?

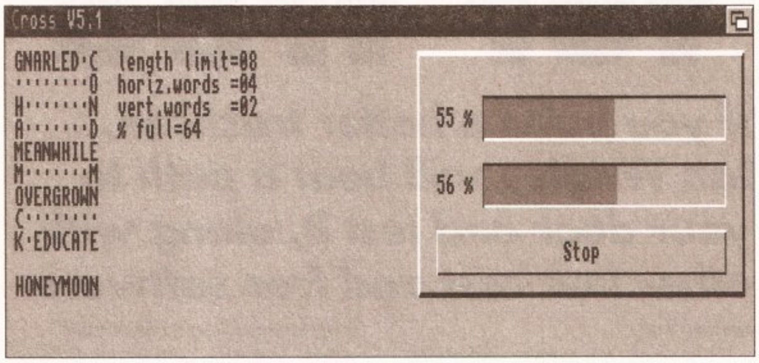
Yes – that's the way that PD reaches a wider audience. Just make sure that you have followed the author's requirements for distribution. These are normally things like not charging more than a certain amount for the disk, not altering the program, or making sure that all the original documentation is included on the disk.

You can also pass on shareware – but not any registered copies of programs. If, when you pay your shareware fee, the author sends you an improved version of the program, then be careful not to give that out. Only pass on unregistered shareware.

You should not, of course, pass on licenseware – it should be treated in the same way as registered shareware.

it's expanding the archive. File size is relatively small, and it's fairly fast. The Workbench front end means that what started out as a very complex Shell-based utility (more options than you can shake a mouse at) becomes perfectly simple to use.

Or so I thought. But it crashed; and it crashed; and it crashed. Even



Cross at work, trying to place words into the wordsearch grid.

choosing **"About"** brought the machine to a shuddering halt – so shuddering, in fact, that even clicking the **Resume** button when I was informed that a program error had occurred locked everything and required a [Ctrl]-[Amiga]-[Amiga] to make it all work again. Undeterred, I thought that maybe there was just a problem with the code for the **About** section, so I tried reading and compressing a disk. This seemed to work fine – although in truth the way the front end has been constructed means that things aren't much more obvious than they were from the Shell, and the documentation is virtually non-existent. But just as I was starting to feel vaguely happy again... yep, another crash.

So, sadly, this particular program gets a rating of zero. Which is a shame; a program that can create decent, compact self-extracting archives is something that's desperately needed on the Amiga. This program may work on your set-up, but on my A500 Plus it just won't play. Presumably it just wasn't tested on a 500 Plus – but there are enough willing beta-testers out there in Amigaland for that to be, frankly, unacceptable.

Whinge over.

Program rating 0/10

PLANETARIUM 1.0

Fish disk 871

This is quite a cool program for any astronomers. Given a date between 1990 and 1995, it will display the relative positions of all the planets in the Solar System – so you can work out which ones you should be able to see. The display is as though you were looking at everything from high (very high!) above the Earth's North pole, although the planets' actual sizes and the distances between them in the diagram aren't to scale.

The program is shareware; $20 gets you version 1.1, which is functionally identical but can accept dates anywhere between AD1000 and AD3000 (although quite why you'd care what positions the planets will be in a thousand years from now is rather beyond me). Unfortunately, we can't print a screengrab, since *Planetarium* isn't particularly multi-tasking friendly: all input is done with the keyboard, not the mouse, and even when I managed to persuade it to move into the background, none of the screengrabbing programs would work with it running.

If you think that this sort of information would be useful to you, *Planetarium* does its job well. It's just a shame about that multi-tasking (non)support.

Program rating 7/10

CONVERT

Fish disk 872

Ever wanted to know how many seconds 1.23 millennia was? Or how many Webers per square metre 32 Klines per square inch comes out as? If so, then *Convert* is the program for you. It runs from the Shell only, and takes as its argument the value and unit of the measurement you want converted. You can specify the units that you want the result to be in, or leave the second option blank to get them all – for time conversions that's millennia, centuries, decades, years, months, fortnights, weeks, days, hours, minutes and seconds. I think that about covers it.

Almost any conceivable conversion is already in here, although surprisingly centigrade to Fahrenheit isn't – perhaps because it's not a straight multiplicative conversion – even though it's mentioned in the documentation. If you want to add your own units, it's easy – they are all stored in a separate ASCII file, so you can add away to your heart's content.

If you find yourself forever checking the back of diaries, looking for conversion charts, look no further – *Convert* does it all.

Program rating 8/10

CROSS

Fish disk 873

Cross is a crossword compiler. Like a few other programs these days, it comes with all its messages in a separate file, so it's easy to translate it into different languages – the program looks in that file when it needs to print something on the screen, and retrieves the string in the correct language. So far, *Cross* supports German, English, Italian and Esperanto.

Once you've decided on the size of your crossword, you can either enter words manually or have the Amiga do it for you – there's a dictionary file supplied, and it seems to do a fairly good job of filling in as many spaces as it can. When everything's finished, you print your crossword – either in plain ASCII, "pretty", or "pretty with numbers" (the numbers are for the clues, which you must generate using a different program – *Cross* doesn't sport any form of text editor). You can also save the crossword in LaTEX format, if you wish (and if you have a TEX interpreter).

The only real problem with *Cross* is that purists won't like the way it enters words automatically. "Real" crosswords tend to be symmetrical about either the X or Y axis (or, normally, both). While you can do that if you're entering words manually into the grid, the program's automatic word placement routine takes no notice of that convention. Also – although this one is far more of a minor niggle – the cursor changes into the "busy" icon when the program is waiting for you to click on a cell to manually place a word. Fine, except that if you've got one of the many available animated pointer routines running on your Amiga, you find that you're trying to work out where the "hot spot" is half the time – it's not easy accurately pointing when your cursor is a rotating egg-timer!

There aren't many crossword creation programs for the Amiga, so if that's the sort of thing you're interested in, you should take a look at *Cross*. It's still a bit primitive, but there's the basis of an excellent program here.

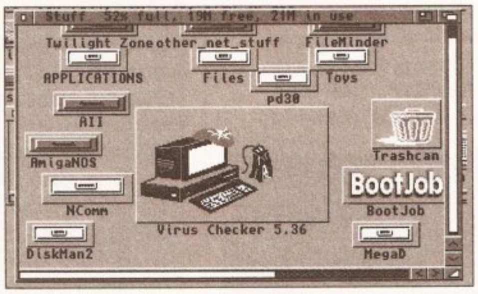
Program rating 7/10

MRICONSORT

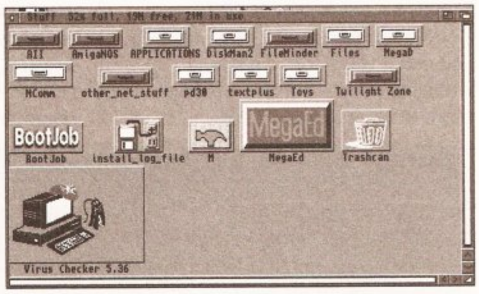
Fish disk 873

If you're as scruffy in your Workbench habits as I am, the chances are that your windows are a disaster area to look at – icons everywhere, some obscuring others, some with no icons because you haven't bothered to create **.info** files.... Okay, stop looking guilty, we're all as bad as each other. Fortunately, help is at hand in the form of *MRIconSort,* a $5 shareware program from Mark Rinfret (those are his initials at the beginning of the program, not an abbreviation for "Mister"). It's simple to use: double-click, select the drawer that you want to tidy and let the program get on with it. If the drawer's window is open while you run the program, you can even watch the tidying process happening.

Everything is controlled by tool types, from the Info window of the program – options such as whether to put files or drawers first, whether to use the window's snapshotted size or the whole Workbench screen width, whether to create icons for files which don't have them and so on. It would have been nice to see all these options available from a menu,



MRiconSort: from this...



...to this in on fell swoop. Neat, if you're not.

GET IN CONTACT!

If you've written – or discovered – any PD, shareware or licenseware that you think should be reviewed in these pages, or if you've got any comments or suggestions, write to Ian Wrigley c/o *Amiga Shopper,* 30 Monmouth Street, Bath BA1 2BW. Alternatively, you can contact Ian on cix as 'iwrigley', or on the internet as 'ian@vampire.demon.co.uk'.

CUT, TICK & POST...CUT, TICK & POST...CUT, TICK & POST

TEL (0702) 466933 FAX (0702) 617123

PD SOFT (AS30) 1 BRYANT AVE, SOUTHEND-ON-SEA, ESSEX, SS1 2YD

EDUCATIONAL DISKS

❑ ^+ **V13 PLAY & READ CHALLENGE (2)** Education programs for the under 7's
❑ ^+ **V546 KIDS PAINT** A painting program designed for children.
❑ ^+ **V584 FASTFACTS** Everything you ever need to know about the solar system **WORLDMAP** Produce Maps. **PLANETS**
❑ ^+ **V792 KIDS GAMES** Geography Math, Sicence and Word Games.
❑ ^+ **V793 AMIGA BEGINNER** You asked for it! Tutorial for the beginner on using your Amiga! Covers CLI & Workbench.
❑ ^+ **V824 ELEMENT v3.0** Nice interactive display of the Periodic Table
❑ ^+ **V825 WORLD DATA BANK v2.2** Using a database of coordinates of the CIA's, it plot's world map's in cylindrical or spherical projects in degrees of magnification.
❑ ^+ **V843 DESERT STORM** Select Maps & info surrounding the Attack
❑ ^+ **V849 LANGUAGE TUTOR v1.0** Spanish, French, German & Italian.
❑ ^+ **V881 SECOND WORLD WAR** Excellent Information production.
❑ ^+ **V908 DPAINT TUTOR** Do you have DPaint, learn how to use it.
❑ ^+ **V927 CLI TUTOR** Helpfull program to understand how to use CLI & Shell.
❑ ^+ **V933 GCSE MATHS** Program to help with the GESE maths course
❑ ^+ **V940 MATHSADV** Simple math problems to solve. **REFLEXTEST** Tests
❑ ^+ **V941 AMIGA FIRST START** Help on any subject you want.+ Easy Start
❑ ^+ **V944 AMIGAWORLD** Contains information about every country
❑ ^+ **V1015 JAPANESE** Help teach Japanese. Word-a-day & Vocabulary.
❑ ^+ **V1111 CHILD QUIZ** Simple Quiz game with colourful graphical pictures from ages 5 upwards.Excellent little game

FULL REGISTERED VERSIONS

❑ !+ **COMPLETE A64 PACKAGE v2.0** With interface & Full Comerical software. Transfers disks from your original 64 disk drive. Full version of the program **£44.99**
❑ ^+ **CROSS SITICH** Prints out a picture in a pattern for embroidering **£16.99**
❑ ^+ **GS1 FORMULA ONE** Is a managment game on the Amiga. **£4.99**
❑ ^+ **GS2 POWERBASE** Is a database that should cater for evertones needs. Stores upto 10,000 records. **£4.99**
❑ ^+> **GS3 EARLY LEARNING MATHS** Teach young chirldren ages 5-9 with nice large fun school III type graphics **£4.99**
❑ ^+> **GS4 SPELLIE COPTER** One of the best educational games. **£4.99**
❑ ^+ **GS6 SUPER SOUND v4.1** A completly New version with loads of extra features **£4.99** or £14.99 with a full Printed Manual and software.

VARIOUS UTILITIES

❑ ^+ **V16 AQUARIUM** Turns your screen into an eyecatching Fish tank.
❑ ^+ **V109 PRINT STUDIO** Excellent for printing graphic pictures or text.
❑ ! - **V215 DISKMASTER v3.2** Copies files from one disk to another.
❑ ^+ **V262 DUPLICATION & BACK-UP** Superduper,Turbo copy, Sanity copy
❑ ^+ **V277 FORTRAN-77 v1.3c** Compiler, linker & run time support libs.
❑ ^+ **V298 NORTHC v1.3** Complete C language with all files needed **(2)**
❑ ^+ **V301 EYE OF THE BEHOLDER** Disk Book with Maps, Strategy & Solution.
❑ ^+ **V323 ANALTICALC SPREAD SHEET** The best spread sheet. **(2)**
❑ ^+ **V332 AMIGA PUNT PROGRAM** Predict which horse will win the race
❑ ^+ **V350 BUSINESS CARD MAKER** Design your own Business cards.
❑ ^+ **V366 600 BUSINESS LETTERS** Over 600 Standard Business letters
❑ ^+ **V390 DESK TOP PUBLISHING** Extra features,Text & Graphics Editors
❑ ^+ **V392 AMICASH BANKIN** Best bankin program that I have ever used
❑ ^+ **V394 CHEMESTETICS v2.14** Draws molecules using the calotte model.
❑ ^+ **V401 WINDOWBENCH (2)** Give your Workbench v1.3 a stunning new look and update your aging software.
❑ ^+ **V424 ANTI-FLICKER** Said to stop the flicker in High Res mode
❑ ^+ **V444 PRINTER DRIVER DISK III** Now contains instructions on how to install them. Theres about 90 drivers
❑ ^+ **V479 CHESS & UTILITIES** A collection of chess related Puzzles.
❑ ^+ **V489 AMIBASE PRO v2.0** This is most popular PD Database program.
❑ ^+ **V490 MESSY SID v2.0** Reads MS-Dos disks, Transfer any text files to & from an IBM PC, ie PC to Amiga
❑ ^+ **V523 DICE C COMPILER (2)** Matthew Dillons full featured powerful C compiler & environment system.
❑ ^+ **V536 CATALOGUE UTILITIES** A collection of utilities used to Catalog disk/ Video & Tape collections **(2)**
❑ ! - **V567 GENERATORS** Selection of utls & Printer Driver Generators.
❑ ^+ **V569 DUNGEON MAPPER v1.1** Can design maps for dungeons & Towns.
❑ ^+ **V573 FILE & HD** HDClick v2.0, File Minder, DosControl, & tools. **(2)**
❑ ^+ **V575 HOME BUSINESS** Based on word processing, Data Management, Spreadsheets, Accounts & Printing. **(6)**
❑ ^+ **V583 ICON EDITOR III v2.0** Create Icons upto 640x200. Edit or Create
❑ ^+ **V587 GELIGNITE FONTS (2)** If you want some coloued DPaint fonts.
❑ ^+ **V610 GOLF SCORES v1.84** It will record each round you play, Store it, make up an eclectic score NEW!

❑ ^+> **V611 FOOTBALL LEAGUE EDITOR v1.1** Want to update your teams league position as the results come in.
❑ ^+ **V620 ASPICE v3.2** Full featured program for electric circuit.
❑ !- **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
❑ ^+ **V627 DPAINT FONTS No's 1-3 (3)** The latest selection Fonts for use with any IFF Painring / DTP Program.
❑ !- **V635 IBeM EMULATOR v1.5** Is a CGA Colour IBM-PC Emulator written to run on any Amiga. Shareware version
❑ ^+> **V660 HOME MANAGER** Is an addressbook,inventory database, 2-do list
❑ ^+ **V661 VERTEX** Create 3d objects without using the X, Y & Z views. Loads Sculpt 3d+
❑ ^+ **V662 DCOPY v3.1 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy (Fully updated version)
❑ ^+ **V678 DRAW MAP v4.1** You can generate world maps in detail views. 3d or 2d ❑ 2Mb **(2)** or ❑ 1Mb
❑ ^+ **V681 GAME TAMER v2.2** Get a hold of that extra hard game & Cheat.
❑ ^+ **V684 FONT EDITOR v1.0,** Also contains other utilities. IFF Fonts
❑ ^+ **V685 ASTRO ASTROLOGY v3.0** Best Astrology program on the Amiga
❑ ^+ **V686 MULTIDOS v1.12** After this program has been installed your Amiga drives can then read 720k IBM Disks.
❑ ^+ **V688 MAGNETIC PAGES v1.30** Creates disk based mags with graphics
❑ ^* **V690 WB 2/3 UTILITES** Contains the programs that should have been with WB 2. Take full advantage of the many NEW capabilities that are available. **(2)**
❑ ^+ **V693 HARLEQUIN VIDEO ART** A video production with backgrounds **(3)**
❑ ^+ **V698 AGRAPH v2.0** Brings the world a cheap draw Bar, Line, Area & Pie chart production/ presentation program.
❑ ^+ **V705 MED v3.21** Excellent update to the famous music program
❑ ^+ **V710 AREXX TUTORIAL** Includes several sample Arexx scripts & sample progs. ARexx comes free on all WB v2.04+ disks
❑ ^+ **V711 UNIX** Contains a working demo of Minix (Unix) System call campatable
❑ ^+ **V715 BIBLE** The entire text of the new Testament & Torah Old Testament **(3)**
❑ ^+ **V719 FREECOPY v1.8** Removes protected games copy protection so that the user can install them on HD.
❑ ^+ **V727 ART OF MED 2** Another excellent select of Med tunes.
❑ ^+ **V731 AMOSBROT v1.1a** More fractal types which include Logistic Equation, Coast lines & trees
❑ ^+ **V733 SOFTWARE LISTER v1.6** This program is designed to keep a track of your Software collection.
❑ ^+ **V742 ONLINE v1.4** Program will allow you to find cheats within games.
❑ ^+ **F691 PROFESSIONAL C MANUAL v3.0** Is the largest collection of utilities, documents & examples for C, It consists of six manuals, with over 40 chapters **(5)**
❑ ^+ **V757 AMIGADEX v1.61** Creates a card index database system.
❑ ^+ **V758 TEXTPLUS v4.0e** Another update of this excellent Word processor program. Requires Hard drive
❑ ^+ **V759 TEXT ENGINE v4.0** Updated version of the Word processor with **AZSPELL.** Excellent spell checker
❑ ^+ **V761 A-GENE v4.18** The most popular genealogy database program.
❑ ^+ **V770 ACCOUNT MASTER v2.12** Excellent Amos written program
❑ ^* **V773 WB v2.04 WINDOWBENCH v2.0** Excellent Workbench replacement for all WB v2.04+ Users **(2)**
❑ ^+ **V777 VOICE CLI v5.5** The idea is to control the CLI with your own voice.
❑ ^+ **V778 RAYSHADE v4.0** Complex Ray tracing package. 2Mb **(3)**
❑ ^+ **V782 FORMS** Create, Edit, Draw , Colour & print your own forms
❑ ^+ **V783 PROGRAMMING TOOLBOX** Many programs to help in your development efforts (most C but some in basic).
❑ ^+ **V784 AREXX (2)** disks which contain Arexx programs & examples
❑ ^+ **V786 PASCAL** This disk contains everything needed to program in Pascal. Includes a68k 68000 assembler & more.
❑ ^+ **V787 PROGRAMMER TOOLS** GadTools to design your user interface to your own programs using all of Amiga DOS 2.0+s new features. Also RegTools.
❑ ^+ **V790 ANIMATION UTLS** Includes CyroUtils for splitting, combining, and creating animations from IFF picture files.
❑ ^+ **V791 DIRECTORY ULTS** Highly recommended programs which are designed to make CLI & Shell tasks virtually obsolete.
❑ ^+ **V794 GRINDER** Complete graphic conversion package that supports GIF, JPeg, Atari St (Neochrome / Degas), PCX, Targa, TIFF, Ham-E and IFF Format pics.
❑ ^+ **V797 EASY AMOS** Contain source code for use with Easy Amos. **(2)**
❑ ^+ **V799 ADVENCED UTILs** SerNet & ParNet, Connect 2 Amigas & share resources via the serial or Parallel ports. MyMenu WB 2.0 menus
❑ ^* **V806 WB v2.04 UTILITIES (2)** 2nd collection of WB v2.04+ utilities that take advantage of the NEW capabilities.
❑ ^+ **V811 ELECTROCAD v1.42 & PRO TOYPER** Electronics drawing Programs.
❑ ^+ **V812 CANON** This disk contains Printer Drivers & Canon Studio, Gives better print output for any 9 pin printer.
❑ ^+ **V815 FILE & HD 2** DirWork v1.62 MegaD File copier like Disk Master **(2)**

❑ !- **V817 A500 PLUS EMULATOR** As it sounds will let v1.3 / v1.2 owners run WB v2.04+ software with out any need to purchase to WB v2.0+ chips.
❑ ^+ **V818 INSCRIPT v1.1** Produce video titles. Includes fully editable text entrys, Use IFF Pictures as back grounds
❑ ^+ **V820 BBBBS v5.7** Baud Bandit bulletin Board System Ftures include up to 99 file libraries, interface to extra devices
❑ ^+ **V821 SNOOPDOS v1.5** Monitors AmigaDos calls & allows you to see what library, devices, fonts are required.
❑ ^* **V822 BACKUP v3.77** A hard drive backup program that features, multi-drive support, full backup, compression.
❑ ^+ **V823 POWERPLAYER v3.4** Very powerful, user friendly module player. It can handle nearly all module formats
❑ ^+ **V826 AHDM v3.4** Hard Drive Menu. When placed in your startup-sequence, offers a 16 page menu
❑ ^+ **V827 REPAIR-IT 2: NewZap v3.3,** A multi sector file editing system. **FIXDISK v1.2,** Recover's as much as possible from a defective disk **DISKSALVE v1.42,** Creates a new file system structure on another device, with as much data salvaged from the original device.
❑ ^+ **V841 MODULA-2** Contains modula-2 language on the Amiga.
❑ ^+ **V842 SID v2.01** Sid can be used for various operations, The best is the file copier on the Amiga.
❑ ^+ **V844 DELITRACKER v1.3** Powerful & system friendly music player. Will play over 40 difference types of modules.
❑ ^+ **V845 Q.M.J v5.31** Generate julia sets & complex Quaternion Julia slices.
❑ ^+ **V846 SCOPIOUS MAPPER** An excellent Dungeon mapping program
❑ ^+ **V847 MONEY MANAGEMENT v1.01** Home accounts which allows you to keep track of upto 12 accounts
❑ ^+ **V848 SLIDESHOW GENERATOR v3.1** Creates slideshows of pictures in various formats for the amiga.
❑ ^+ **V850 FRAC v1.1** is a graphical Role playing game creator.
❑ ^+ **V856 PICTURE TOOLS** Converts Pictures to other formats and styles.
❑ ^+ **V857 POSTSCRIPTERS** Down loads Postscript Fonts for printing on standard Dot matrix printers.
❑ ^+ **V858 MUSIC MAKERS** A selection of programs to produce your own music productions. Make your own music.
❑ ^+ **V859 AUDIO TOOLS (2)** Sound and Audio production utilities.
❑ ^+ **V861 3d DESIGNER** Graphic production utilities including CLight, DKBTrace
❑ ^+ **V865 IMAGE PROCESSORS** Contains Tools to perform a wide variety of Image Techniques (IFF)
❑ ^+ **V866 MANDEL EXPLORER (2)** This is the best collection of Fractal Generating software on the Amiga.
❑ ^+ **V869 ANIMATION ASST (2)** Will solve many of your animation problems. Includes ABridge, Players, DA, AnimTools
❑ ^+ **V871 3d HELPER** Are you starting out with 3d graphics. This is what you need
❑ ^+ **V872 ICON TOOL KIT** Just about every tool you could imagine
❑ ^+ **V873 UGFC v1.1** Will help you translate between Graphic formats
❑ ^+ **V875 SPACE** Help you study, identify the Stars & celestial objects.
❑ ^+ **V876 SYSTEM TEST v4.1** Checks & reports on your computer
❑ ^+ **V882 MAGNUM v1.4** Another excellent Disk Magazine Creator.
❑ ^+ **V888 TRONI CAD v1.0** The best CAD program for your Amiga. With various power functions.
❑ ^* **V896 TOOLMANAGER v2.0** Includes the ability to add menus to your Tools menu. add WB icons or Windows.
❑ ^+ **V899 ABACKUP v2.4** A Powerful backup utility that may be used for Hard Drive backup & File Archiving. **SysInfo**
❑ ^* **V900 BOOTJOB v1.0** Include functions to store, install, view or execute any bootblock. Can save BB as executable
❑ ^* **V901 FIM v2.2** IntroMaker to create you own Intros. IFF imports
❑ ^+ **V921 COMPUGRAPHIC FONTS** Will work with DPaint v4.1, ProPage3, Pagestream, Page setter & Work bench v2.04+. About 30 Fonts **(3)**
❑ ^+ **V924 PLOT MAP v0.85** An extra disk for use with Draw Map v4.0+ Will allow use of the program with 512K RAM
❑ ^+ **V925 SLAUGHTER CHEATS** Selection of WB Hacks & Cheats
❑ ^+ **V928 THE LITTLE OFFICE** One of the best disks at the present time. Has a Word Processor and others
❑ ^+ **V936 LETTERS & BOILERPLATE** Letters for you to use as your own or cut & pause into a Word Processor
❑ ^+ **V942 SCREEN BLANKERS** A disk packed with screen blankers. Includes the Twilight Zone blanker along with 10 others
❑ ^+ **V943 LYAPUNOVIA v1.5** Mind-boggingly colourful program that makes pictures from a mathematical formula. Now with AGA support
❑ ^+ **V945 PROPAGE 3 ENHANCER** Over 40 Genies for use with ProPage 3.0, including useful ones like Make Pie Chart. Also structured clipart for unique borders!
❑ ^* **V946 SYSTEM OPTIMIZER** KCommodity gives you memory meters. REorg will optimize hard / floppy disks for big speed increase. HDMem virtual memory. 2 Meg of HD space for 2Mb
❑ ^+ **V947 GNUPLOT** is a command driven interactive function plotter. Creates stunning plot/graphs of mathematical functions. Requires a hard disk drive

❑ ^+ **V948 INTUITION BASED BENCHMARKS v5.5** A great package with all the popular BMs like Sieve, Dhrystone, Savage, IMath & Matrix.
❑ ^+ **V949 TESTS** Contains all of the classic speed tests and system checks we could find. Includes CPU Speed, A full featured system diagnostic tool & more.
❑ ^+ **V950 GAME CONSTRUCTION** ADL is a programming language and run-time environment designed for the convenient writing of adventure games.
❑ ^+ **V951 PROTECTION** is a collection of utilities aimed to protect your data and protect autobooting HDs & Document File. Lock your data files with a password
❑ ^+ **V952 x-BENCH v1.0 (2)** Complete solution to the replacement Workbench. Contains LastHope, View, Virus Checker, Power packer & DCopy2
❑ ^+ **V957 TACKS v1.2** Help you create self-booting animation disks.
❑ ^+ **V958 CLUB LEAGUE** Is a utility that will allows you to edit and keep track of your divisons/leaggue stats.
❑ ^+ **V959 AMIGA_E v2.1b** Specific compiler. E is a powerful and flexible procedural programming language
❑ ^* **V962 SUPER KILLERS v3.0 (2)** The latest Virus Killers like BootX v5.23a, which can save any bootblock and install it on another disk as well as check for viruses. VC v6.2 and VirusZ
❑ ^* **V976 WB v2.04 UTILITIES 6** Next collection of WB v2,04+ utilities.
❑ ^+ **V977 FILE & HD No 5-6** Next Excellent collect of HD utilities. **(2)**
❑ ^+ **V979 NCOMM v3.0** Is a communications program based on Comm v1.34 with lots of very nice enhancements
❑ ^* **V980 KICK v1.3** Will down grade A500+, A600, A1200 users machines to run software that would NOT normaly work. Turns them into a Workbench 1.3.
❑ ^+ **V983 MEGA CHEATS v3.0c** Now contains over 500 cheats.
❑ ^+ **V984 PROTRACKER v3.0a** The latest updated version from Norway, Various bugs fixed and 70 new features
❑ ^+ **V988 ZIPBENCH v4.0** Another Workbench replacemant but contains excellent utilities like, powerpacker v2.2a, powerplayer, SysInfo, VirusX, Archiver, b-Base, BootIntro, Degrader, Fist Aid Box **(2)**
❑ ^+ **V994 THE MONEY PROGRAM v1.5** Features include upto a maxium of 60 accounts, upto 50 direct paymenys,
❑ ^+ **V1000 GRAPHPRO v1.0** Written with Amos pro by David Jordan. Basically takes a set of data, plots them on a graph.
❑ ^+ **V1001 VMORPH v2.21** Will allow you to create smooth morphs/warps between two different images over a period of frames to create an animation.
❑ ^+ **V1002 RAMOS PRO** If you have Amos Pro then this disk will make your programs Boot without the program disk
❑ ^* **V1003 NICKPREFS** Is an enhancement to WB 2/3 which adds 3 new preferences WBPicture, BuzyPionter & Floppy.
❑ ^^ **V1005 WORKBENCH 3.0 UTLS** Contains the fist batch of A1200 and A4000/030/040 Utility programs
❑ ^+ **V1009 TURBO TEXT v1.1** Excellent Word Processor. Very impressiveversion
❑ ^+ **V1013 POOLS PREDICTION** Need another helping hand with the Pools then this is it.
❑ ^+ **V1016 OCTAMED v2.0** Music editor which was designed for making music for programs. (FULL & NEW VERSION)
❑ ^* **V1017 POST v1.86** An excellent Postscript interpreter for the Amiga which implements the full Adobe language **(3)**
❑ ^^ **V1021 WB 3 SCREENS** Enhance your Workbench disks backgrounds with theses nice full coloured pictures
❑ ^+ **V1022 LITTLE TRAVELLER v1.1** Shows a world map & you can select any country for travel information, Zooms up another close up map with more detail.
❑ ^+ **V1023 QUIZ** Contains Questions & Answers with the option to add
❑ ^^ **V1024 MANDELSQUARE v1.6** Generate enhanced AGA Mandelbrot set images, requires numerical coprocessor. You can create 256 colour coloured pics
❑ ^* **V1025 TERM v3.1** Comm prgroam, Xpr transfer, filetype ident after download, cut & paste, point-and-click, auto upload/ download, VT102/VT220, Ansi emulation, powerfull phone book & AGA support **(3)**
❑ ^* **V1034 ADM v1.01** Flexible address database with loads of great features.
❑ ^+ **V1035 FES BASIC** Just in time for all the new machines which do not have Basic with thier machines any more.
❑ ^^ **V1037 (AGA) A1200 WB HACKS** An excellent collection of Utilities & Hacks
❑ ^+ **V1038 AMOS PRO UPDATER v1.11** 1st Update to the Amos Professional
❑ ^^ **V1039 (AGA) WB3.0 INSTALL** If you need to install your A1200 HD then you need this. Also see V1075
❑ ^+ **V1040 bBASEIII v1.3** An easy to use, versalite, yet full featured database. Greatly enhanced successor to bBASE II.
❑ ^+ **V1041 DIGITAIL BREADBOARD** Full featured digitail circuit simulator
❑ ^* **V1043 SUPER DARK v1.5** A screen blanker like After dark from the MAC theres about 30 blankers.
❑ ^+ **V1044 FANCY PRINTING DISK** Contains Banner, Graph Paper v1.2 and Disk Print v3.59.
❑ ^+ **V1045 uDRAW v1.0** Provides a mechanism for the rabid drawing of schematic diagrams. Bitmap oriented
❑ ^+ **V1046 THE XI RAVE SAMPLES** Grarett Watt's IFF 808 State samples

❑ ^+ **V1048 HAM-8 VISTAS (2)** Collection of Ham-8 Vista drawings
❑ ^+ **V1051 EASY CALC v1.0** A spread sheet designed to be both easy to use and fast. Built in excellent help system.
❑ ^+ **V1054 ADVANCED UTLS 2** Compress Disk doubles the capacity of your D on the fly with compressions Also DiskOptimizer, SCSI Mount and more.
❑ ^* **V1055 PARBENCH** All the software you need to hookup 2 Amiga's or CDTV's.
❑ ^+ **V1056 DEVELOPER** Contains the official Commodore developers Kit for the Amiga Guide & install utilities.
❑ ^+ **V1057 EDPLAYER** Music MOD player that looks, acts & plays like a CD
❑ ^+ **V1058 3D GRAPHICS** Several 3d moddeling/ray tracing programs
❑ ^+ **V1059 GRAPHICS** Create stunning graphical images. MPath creates swirling galaxy images. Roses, Rayshade
❑ ^+ **V1060 CIRCUIT BOARD DESIGN** Includes mCAD v1.26 and several terrific routines for the electronic enthusiast.
❑ ^+ **V1061 DISK UTLS** Several highly recommended programs for performing file hard drive backup, file recovery, disk track recovery, and forced disk validatuion
❑ ^+ **V1062 DESKTOP PUB**Transfers Macintosh screen fonts .AFM metric files to Amiga fonts/PPage .metric files.
❑ ^+ **V1063 RIPPERS, STRIPPERS & BEATS** For the music enthusiast, designed to strip music from your favorite games
❑ ^+ **V1067 3D OBJECTS 3** About 20 objects in Sculpt / Turbosilver format
❑ ^+ **V1069 PRINTER DRIVERS 5** Deskjet 550c, 500, 500c, Ricoh HP1200, Canon BJ300, 130, LPB, 10e, PJ1080a HP Paintjet.
❑ ^^ **V1070 (AGA) UTLs 2** Contains 256 colour icon editor, Plamsa256 and QuickGrab v1.1.
❑ ^^ **V1071 (AGA) MSM v1.8** Martins system monitor for programmers
❑ ^^ **V1072 (AGA) WINBLENDER v39.28** Create excellent/stunning AGA fractals. Also contains 68030/040/FPU versions.
❑ ^+ **V1073 FT-X ACCOUNTS v2.01** Was written as there are not ready any other good account packages.
❑ ^^ **V1074 (AGA) UTLs 3** Collection of AGA Based utilities. Includes Kill AGA Which allows you to run old badly written programs incluing demos & some games
❑ ^* **V1077 GENEALOGIST v3.04** Is a specialized database for keeping track of genealogical information. Full featured & a wide selection of features to use.
❑ ^+ **V1078 PC TASK v2.02** Software IBM-PC emulator. It allows you to run the majority of PC software with no additional hardware. Now supports VGA, EGA, CGA and MDA. This is a demostration version.
❑ ^+ **V1079 KEYBOARD TRAINER v1.1** Best Public Domain Typing Tutor An excellent New program / Amiga
❑ ^+ **V1081 REPAIR-IT 3** Contains a selection of Disk, Hard Drive repairing and file saving utilities for the Amiga.
❑ ^+ **V1083 CROSS v5.1** is a program that creates crossword puzzles for you
❑ ^+ **V1084 SPECTRUM EMULATOR v1.6 (2)** This is the best & latest version of the most popular emulator for the Amiga. There is an 020/030 versions now on the disk which enhance the games on disk.
❑ ^+ **V1087 STOCK ANALYST** is a technical analysis and securities tracking program which calculates when to buy and sell shares.
❑ ^* **V1088 WB 2.0+ UTLS** Contains ChkFrag, DFC5, FastDos, Formatter, No-Click, UnDelete, KeyMac, MegaWB, MR, 1 Plane, OpenL, ResumeMaker & StarBlank.
❑ ^+ **V1089 STATRAM** Recoverable RAM based on VD0 but 5 times faster.
❑ ^^ **V1090 ANDYS (AGA) UTLs** Another selection of utilities for A1200 owners also encludes FakeMem, KillAGA, AGATest, Degrader and much more.
❑ ^+ **V1091 ASTRONOMY v2.0** A menu driven astronomy program that calculatoes information about the Sun,Moon, Planets and Constellations. Help Disk.
❑ ^+ **V1092 HEROQUEST AID** Will aid solo AD&D players who do not have a Dungeon master at the present time. It takes over the DMs role. Good or what.
❑ ^* **V1095 DEGRADERS** If you have trouble running software on an A1200 or A4000/030/040 give this disk a try it will emulate the basic 1.3 rom better that any other software on the Amiga at present.
❑ ^+ **V1096 MING SHU CHINESE ASTROLOGY** Will create a horoscope in seconds not hours. the complete aid.
❑ ^+ **V1097 TITANIC CHEATS v1.40** Contains 950k of raw data which is just a whisker under 600 games.Well presented
❑ ^+ **V1101 RJ UTLs** This disk contains helpful image processing and painting programs. Like Perfect Paint v1.34, Image Workshop v1.3, an IFF Manipulator.
❑ ! * **V11102 DT UTLs** Contains Border for WB v2.04+ machines, MakeKickFile, SKick v3.34, is a replacement for kick-it, Z Kick and LKick kickers. It will softkick any other version of kickstart into ram.
❑ ^+ **V1103 TEK-ATAK MODULES** An excellent helping of wonderful music for your own productions or to listern to.
❑ ^* **V1104 COLOURED ICONS** Transfer your disks into colouful well presented works of art with this database.
❑ ^+ **V1105 VIEW TOOLS** Contains Convert, ViewTree, a Familt tree easy to use database progra. ViewPhone, an Britsh telephone storage database. ViewDisk, is a small disk catalogue utility.
❑ ^+ **V1106 MAJOR LEAGUE** Is a program which allows you to keep track of your favorite teams results. DataIndex v2.4
❑ ^+ **V1107 BLITZ BASIC2** Comprises of a fully integrated editor/compiler environment for the serious Amiga programmer
❑ ^+ **V1109 STAR VIEW** Is designed to show graphicallythe positions of the stars and planets from any point on Earth.
❑ ^+ **V1110 FORCASTER v2.01b** Is a Horse Racing prediction program which uses statistical analysis of Major factors.

AMIGA GAMES

❑ ! - **1073 TETRIS ORIGINAL**This is the closest game to the original tetris
❑ ^+ **1420 DTRIS** If you want a1 or 2 player Tetris this has to be 1 of them.
❑ ! - **1747 LLAMATRON GAME 2001** By Jeff Minter & an excellent production.
❑ ^+ **1749 SCRAMBLE** 'The Original' Remember that old classic gam utlse
❑ ^+ **1977 POM POM GUNNER** Shoot down world wor II air planes in this Operation Wolf
❑ ! - **2018 JETMAN** Spectrum classic converted to the amiga. with all the original sounds.
❑ ^+ **2022 SEA LANCE** The first Silent Service type sub war game on PD
❑ ^+ **2054 ATIC ATAC** A rendition of the game from the original Spectrum
❑ ^+ **2162 BATTLE OF BRITIAN WAR** GAME 2 Strategy war games.
❑ ^+ **2164 DUNGEON ON NADROJ** This is the best D&D adventure type game. Load Wb
❑ ^+ **2220 STRATEGIC GAMES** Eternal Rome, Lords of Hosts, In Moonshine.
❑ ^+ **2221 MIND GAMES 21** of the best games to challenge your mind
❑ ^+ **2272 BLACK JACK LAB** Play all the popular versions of Pontoon
❑ ^+ **2278 CARD SHARP** A professionally presented selection of solitaire games.
❑ ^+ **2280 DIPLOMACY** Classic strategy game loosely based on World War 1. 2Mb
❑ ^+ **2313 REVENGE OF THE MUTANT CAMELS** The ride of a life time with camels
❑ ^+ **2396 PETERS QUEST** Is truly an excellent platform game for all ages.
❑ ^+ **2411 TOTAL WAR** Strategy world conquest type game. 1 or more players
❑ ^+ **2432 GOLDEN OLDIES** Galaga, Galaxian, Space invaders, Asteriods, Batty & Missle Command.
❑ ^+ **2436 DRAGON TILES** Mahjong is a ancient chinese game with coloured tiles
❑ ^+> **2447 COINDROP** Fruit Machine simulator with various gamble modes.
❑ ! - **2448 CRAZY SUE** Another first rate cute school girl platform game.
❑ ! -> **2450 SMASH TV** Simular to the arcade machine. Graphics & sound
❑ ^+> **2480 FRUIT MACHINE 2** As near as poss to the Arcade machines
❑ ^+ **2483 INTRUDER** is a Multi level Berserk clone with smooth graphics.
❑ ^+ **2484 CATACOMB v1.7** Graphical Adv set on a small island in the land of EXOUSIA
❑ ^+ **2485 IRON CLADS** Updated Strategic War Game which is heavy on your mind **(2)**
❑ ^+ **2491 LEGEND OF LOTHIAN v1.02** An excellent adventure game in the vein of Ulima.
❑ ^+ **2498 AMOS CRICKET** Is an excellent arcade cricket simulator with nice graphics.
❑ ^+ **2534 BATTLE CARS II** Get behind the wheel of a heavily armed car as you race round courses.2 players with the computer link
❑ ^+ **2535 SUPER PACK MAN 92** The best PackMan to date with supersmooth scrolling
❑ ^+ **2614 TETREN** is a 1 or 2 player Tetris game. The 2 player game is Head 2 Head.
❑ ^+ **2615 WAR** Strategy war game in which you control a fleet of space craft.
❑ ^+ **2617 GOLDEN OLDIES 2:** Croak, is a 1 or 2 player Frogger. BiPlanes is 1 of the most additive games we have played here. Trail-Blazer, as the C64 Classic. Scamble.Shootemup
❑ ^+ **2620 DR MARIO** You must move coloured pills down the screen. 3 in a row go's
❑ ^+ **2621 ETERNAL ROME** Start the Roman Empire from 32BC. Build fleets, armies & attack
❑ ^+ **2622 DONKEY KONG** Original platform game in which you must rescue the girl.
❑ ! + **2674 INTERPID** In the Artic ice you control a tank on a mission to rescue hostages
❑ ^+ **2676 MORIA v5.4** Loads of new features, better graphics, larger dungeons, screen updates, overview of dungon's map
❑ ^+ **2710 CLASH OF THE EMPIRES (2) v2.1** Strategical War game By T.A.Sear
❑ ^+ **2712 ACT OF WAR** Simular to Laser Squad. You control a team of special troops.
❑ ^+ **2715 TANK ATTACK** This is a 1-4 player version of the Classic Cartridge game Combat.
❑ ^+ **2716 RESCUE** Spaceship game simular to Scrample. Excellent graphics
❑ ! - **2721 E-TYPE II** An Asteriods adventure where you jet around collecting weapons
❑ ^+ **2724 NEIGHBOURS** This is the best graphical adventure game to date **(2)**
❑ ! ->**2732 CYBERNETIX** Defender, Star Gate style game with super fast scrolling.
❑ ! + **2738 AIR TRAFFIC CONTROL** Try to guide upto 100 planes into the AirPort
❑ ^+ **2775 ROULETE ROYAL** Why not do some gamble with chips at the casio
❑ ! + **2802 CARD-O-RAMA** Sea heven, Crib Klondike, Black-jack, Spades, Street .
❑ ! + **2803 PUZZLES** Gold, Dumbbell, Flying, CobraBunny,Get My Goat,Wordhai, Rmyca, Rabbi
❑ ^ + **2814 BULL RUN v1.3** This is one of the classic stratergy games for the Amiga.
❑ ^ + **2825 ALL ROUNDER** A Cricket simulation with great graphics & play
❑ ^+ **2842 CRAZY SUE II** Sequal to the all time best selling PD platform game.
❑ ^+ **2854 SPACE INVAIDERS II** A revised old classic Space Invaiders game.
❑ ^+ **2863 FIGHTING WARRIORS** A karate combat fighting contest game.
❑ ^+ **2876 ESCAPADE** Break bricks in a wall by hitting a ball with bat. Break Out
❑ ^+ **2932 NUMERIX** Enjoy puzzles / Tetris then this is a must. You have a scrabble board & you must place tetris blocks to get points.
❑ ^+ **2941 EXTREME VIOLENCE** Scrolls around much bigger than Smash TV
❑ ! - **2949 OBLIVION** Is the closest I have seen to the original defender arcade game.
❑ ^+ **2987 BOMB JACKY.**A conversion as the original Bomb Jack, it's as the best yet
❑ ^+ **2988 BALDERS GROVE** its here Boulder dash with a selection of levels that work fully
❑ ^+ **2991 VEKTOR** Tron Light cycles game with excellent graphics, sound
❑ ^^ **3023 UCHESS (AGA)** Do you love chess then try this. 4Mb & WB 3.0
❑ ^+ **3037 SSW** Is a game for 2 based on Space Wars but with many extra features.
❑ ^+ **3038 TANK HUNTER** A 2 player Tank Attack game with various levels
❑ ^+ **3039 ASTEROIDS II v0.85** This is the best version of Asteroids i have ever seen, If you like Asteroids games then this is for you
❑ ^^ **3040 TETRIS (AGA)** If you like tetris, you need this disk. AGA graphics.
❑ ^+ **3075 18 HOLE GOLF (2)** The first excellent golf game. Select speed & power
❑ ^+ **3162 SON OF BLAGGER** This is a classic (64/Spectrum) platform conversion Can you remember how active it is to play
❑ ^+ **3214 UNIV CONQ** A strategy game where two human players battle for control of the universe. Status information is continually updated to allow the player to concentrate on strategy. Includes digitized pictures and sound.
❑ ^+ **3215 BATTLE STAR** A fun text adventure game like Zork. You start out on a space ship under attack and you must get to a planet.
❑ ^+ **3257 THE SUITCASE (2)** If you only buy one adveture this should be it. Its excellent.
❑ ^+ **3280 BALL** This is an excellent simple two player baseball game which uses both mouse and joystick to control the players.

IBM PC PD AND SHAREWARE

❑ **NEOPAINT v2.1b** The most popular paint package all new features. New versions
❑ **ENVISION PUBLISHER** Is a full featured desktop publishing program with scalable fonts, full object drawing, mouse support.
❑ **GRAPHICS WORKSHOP** Is a program for working with computer bitmapped graphic files it will handle PCX, TIFF and many more. Once an Amiga IFF picture is converted to PCX format use this and just take a look at the features. ❑ Windows or ❑ Dos

STAR TREK + SI-FI

❑ ^ + **AT05 KLINGON D7 CRUISER** fires torpedoes while passing by.**NCC-1864**
❑ ^ + **AT10 ENTERPRICES** Leaves the Star station dock. **NCC 1701-A** classic original
❑ ^ + **AT22 APPROACHING VESSELS**
❑ ^ + **AT23 STAR TREK FLEET MANEUVER**
❑ ^ + **AT33 THE PROBE II** Anim. & **BRID OF PREY**
❑ ^ + **AT34 LEAVING SPACE OFFICE** Docking ,Attack mode, Bird of Prey Scout attacking.
❑ ^ + **1060 STAR TREK *: TNG** By Terry A Mc Intosh
❑ ^ + **1081 UTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now in English
❑ ^ + **2222 STAR TREK TNG** This is the latest quiz game based on the T:N:G **(2)**
❑ ! - **2501 STAR TREK** By Jimbo Barber **(2) (2dd)**
❑ ^ + **2503 STAR TREK** Eric Gustafson. **(3) (2dd)**
❑ ^ + **2926 STAR TREK THEMES! (2)** The original sampled version of the Star Trek themes.
❑ ^ + **2879 CULT TV II (2)** This volume features 6 more cult shows from the 60s & early 70s include complete Episode Guides, Indepth backgroud guides, seasons listings, cast and Credits
❑ ^ + **3108 STAR TREK: DEEP SPACE 9 SLIDES**

❑ **Star Trek / Wars Video Tape**
25Min long Tobias Richter 24bit ray traced animation which took 6 weeks to produce. (VHS Format) £11.99

Code Numbers

+	Works with Workbench 2.0
*	Workbench 2.0+ Only
^	Works with Workbench 3.0
^^	Workbench 3.0+ Only
>	Not A600 Machines
-	Not A500 or A600 Machines
!	Not Workbench 3.0
??	Requires ?? Amount of disks
??Mb	Requires ?? Amount of memory

NEW DEMOS

❑ ^* 3208	TANK POLICE ANIM (2)
❑ ^+ 3210	SNOW JOKE ANIM (2)
❑ ^^ 3212	(AGA) NIGHT BREED SLIDES (2)
❑ ^+ 3136	KEFRENS DESERT DREAM (2)
❑ ^+ 3139	SCOOPEX 2 UNLIMITED (2)
❑ ^+ 3146	HEADING FOR HOME (4) 3Mb
❑ ^+ 3151	HYDRA BY POLAND
❑ ^+ 3152	FRACTORY BBS BY TEK
❑ ^+ 3156	TECHNO II DESTRUCTIVE YOUTH
❑ ^+ 3101	GRAPEVINE 15 (3) £4.00
❑ ^+ 3000	LETHAL EXIT / DIGITAL
❑ ^+ 3004	MIRROR / ANDROMEDA (2)
❑ ^^ 3063	(AGA) HOIS MEGA DEMO
❑ ^+ 3002	DEMON DIL DEMO (2)
❑ ! + 2989	3d DEMO II v2.01
❑ ^+ 2921	STATE OF THE ARTS
❑ ^+ 2867	TRSI / W.SENSATION (2)
❑ ^* 2815	LAWNMOWER MAN (2)
❑ ^+ 2858	JESUS ON E'S / LSD (2)
❑ ^- 2984	MOVE YOUR MOUSE (2)
❑ ^+ 2633	XPOSE / THE SILENTS (2)
❑ ^ - 2977	BIZARRE INC (2)
❑ ^+ 2749	ULTIMATE DANCE
❑ ^+ 2623	TIME ZONE / TRSI (2)
❑ ! - 2632	TECHNO CONSPIRACY
❑ ! - 2965	TECHNO / INVESTATION
❑ ^+ 2870	OLDBULLS / DAMAGE
❑ ^+ 2872	C64 DUKE BOX TUNES!
❑ ^+ 2763	ITS TIME TO PLAY
❑ ^+ 2781	RAVE ATTACK II
❑ ^+ 2833	TECHNO TRANCE III
❑ ^+ 2753	HISTORY OF HOUSE (2)
❑ ^+ 2871	C64 MEMORYS
❑ ^+ 2986	ACCOUSTIC SILENCE

ORDERING BY POST Please tick the boxes to the left of the disk numbers with a coloured pen, Hi-Lighter or just outline the disk (s) you want to order. After selecting your order please fill in your Personal details on the order form provided. CUT OUT or Photocopy this advert and Post to the Address above. Hand written orders are also acepted. Cheques & Postal orders make payable to: PD-SOFT. Ordered before please tick the Account box or just fill in your number which was on the previous delivery note.

COLLECTING DISKS You can now collect any disks at our office address 6-8 Durham Road, Southend-On-Sea, ESSEX, SS1 2YD **EEC (NON UK)** When ordering there is a min order of 5 disks please add 20% for Airmail postage . Eurocheques are acepted. **INTERNATION ORDERS** Please add 20% to your order's total (Min £2.00) to cover Air Mail postage. Cheques must be drawn on U.K. Banks. No postal orders

ACCESSORIES ❑ MOUSE PAD.**£3.49**
DUST COVERS £4.49 ❑ A500 ❑ A600 ❑ A1200 **£4.99** ❑ LC10 ❑ LC24/10
❑ 3.5 DISK CLEANING KIT.................**£3.49**
____ DISK LABELS 3p Each / Min 50 or ❑ (£11.99 for 1000. Which Includes P&P
DISK BOXES ❑ 40 **£5.49** ❑ 80 **£8.99**

CATALOGUE DISKS (3) 1Mb ❑ 2Mb+ ❑ **£2.50**

PRICES ARE PER DISK

1....DISK	£3.00
2-5.....DISKS	£2.75
6-10....DISKS	£2.50
11-20..DISKS	£2.00
21-50..DISKS	£1.75
51+......DISKS	£1.50

Your Name		A/c No	
Address			
Post Code		Telephone	
Card Card No	❑❑❑❑ ❑❑❑❑ ❑❑❑❑ ❑❑❑❑	Expiry Date	
Signature		I enclose cheque/PO for	£

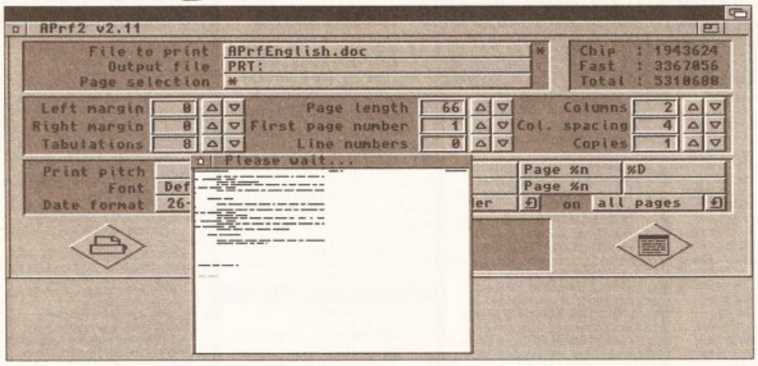
PD-Soft Font Disk 01
AachenBold AachenLight AARCOVER Adjutant Agate Albatross Alexandria Alison americanuncial Andromeda Arabian Architect andesiteplain AlexAntiqua

PD-Soft Font Disk 02
Arctic2 Ariston Ashley Author Avlon AvantGarde Baskerville BauhausBold BauhausLight BauhausThin BeckerMedium BEDROCKLIGHT BEESWAX BEFFLE BenguiatBold BenguiatLight BellBottom Benjamin BENJAMINCAPS

PD-Soft Font Disk 03
BILLBOARD BINNER BIZARRO BlackForrest BLADES Blippoleary Bodacious BodilyBold BorzoiReaderBold BorzoiReaderItalic BorzoiReaderPlain BUBBLE BurlObli Cairo

PD-Soft Font Disk 04
Caligula Camberic Canoith CascadeLight CarawayBold ChilliPepper Caslonlight CaslonOpenface ChiTown Cartoon CAVEMAN Chancery CharlieChan Chicargo

PD-Soft Presents:- Our all NEW Fonts collection. There are 26 disks within this set in two formats Adobe Type 1 or Scalable. Adobe Fonts Work have been test on Final Copy IIb, Page Stream V2.1+ and the Scalable Fonts have been tested on Professional Page V3.0, Page Setter V3.0, Workbench V2.0 and Workbench V3.0. Both types will work with loads of other Amiga packages that can take the font formats. Please State AD"" for Adobe Type 1 and SC"" for Scalable Fonts. **£3.00 Per Disk**



APrf2: a seriously cool printing tool that promises professional-looking output.

but it's no trouble to edit them from the Info window, I guess.

My Amiga's screen is neat and tidy now, thanks to Mark. So for that alone, this program gets a...

Program rating 9/10

APRF2

Fish disk 875

APrf is by our old from Denis Gounelle, a prolific writer of Amiga PD and shareware. It's a tool for managing your print output – and it's extremely powerful. If you're using a basic text editor to create your documents, this will ensure that they're printed looking neat and professional – regardless of how primitive your editor's own output handling is.

There are loads of options available. All the obvious ones are there, of course – left and right margins, number of tabs, page length and so on. But then you look at the rest of the buttons on the screen and realise just how much you can do with this package. For example, multiple columns are no problem – and you can specify the spacing between them too. Headers and footers are supported, and there's a wide range of data that they can include, such as the time, page number, filename, filesize, the number of this copy (multiple copies are no problem, and giving each a unique number is useful where security is an issue) and so on. You can specify that headers and footers appear on all pages, all except the first page, or just the even or odd pages. There are plenty of filters available to weed out rogue ANSI or Control characters, and Denis has even implemented a preview window which gives a small view of how your file will look when it's been output – you can't read the characters, but at least you have an idea of the overall appearance.

This is a great little program. For anyone without a high-end word processor that does all this stuff for you, it's a must.

Program rating 9/10

FIND

Fish disk 879

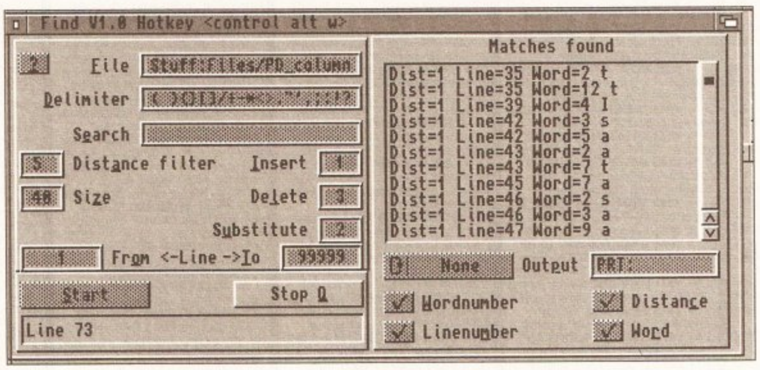
Oh wow. If you're not a techie, jump ship now – this one's certainly not for you! It's what is described by the author as a pattern-matching program which uses the weighted Levensthein Distance algorithm. Quiet at the back, there – pay attention.

Basically, the program searches text files for strings, as will any word processor worth its salt. However, it will also try to match mis-spelled or slightly different words, which can be useful in a variety of situations – say, when you have a person's name in the text and you know that you've spelled it three or four different ways. *Find* will come up with all instances of the name, as long as they're within a certain "distance" of the spelling you give the program.

It's here that things start to get complex – and of course that means that they get more and more useful. The algorithm tries to match words using three operations: insert a character, delete a character and substitute a character. So, for example, if you search for "smile" you will also find "smiles", "smle" and "smule". You control how far off the original the found words can be by setting the "distance", which is done by giving a "weight" to each of the three operations (insert, delete, substitute). So, for example, if you decided that a *substitute* character would have a weight of 3, then "smule" would be three away from "smile" – and therefore would be found if you told the program to look for words three or more distant from the original.

Confused yet? Actually, it's not as bad as it sounds – but you really do have to concentrate on the documentation to get the hang of things.

The only real question I have is whether people will actually use this utility. True, it's sophisticated – but I think that for most people, it's a little like overkill. And – though maybe I just hadn't got the hang of the thing properly – the results seemed a bit suspect to me, on some of the searches.



Find: this is the program you need if you want to do complex text searches.

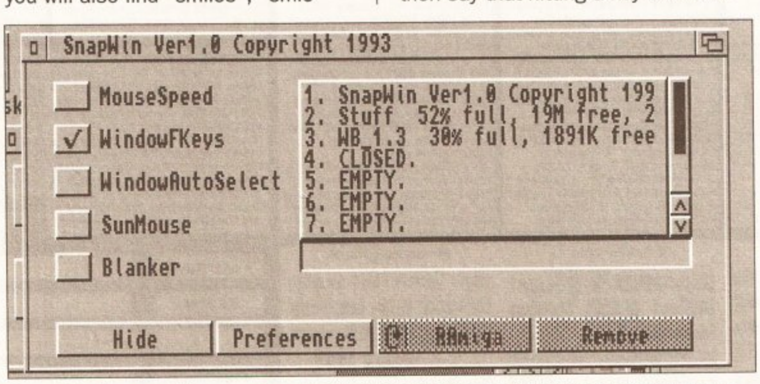
If you're a fan of Unix utilities like *Grep*, this will probably warm the cockles of your heart. Me, I'll stick to the **Find** feature in my word processor.

Program rating 7/10

SNAPWINDOW

Fish disk 880

SnapWindow is a shareware program which enables you to easily activate windows at the press of a key. If you don't think that's useful, wait until you have a couple of applications, a Shell window and the Workbench screen all active at the same time – then say that hitting a key to select the one of your choice wouldn't be useful!



SnapWindow enables you to select windows simply by hitting Function keys.

To use the program, you simply hold down the [left Amiga] key and hit a function key of your choice while a window is open. Now, every time you press the function key, that window pops to the front. All ten function keys can be assigned, so even the most powerful of power users shouldn't be in trouble! *SnapWindow* also has a few other useful features built in, such as a "SunMouse" option, which automatically activates a window as soon as the mouse passes over the top of it. I tend to think that this is of limited use, myself – clicking on a window to activate it isn't a problem, and I found that this mode caused more problems than it was worth – you can be typing away in one window, only to discover that another has been activated because you nudged the mouse, and you've lost the last three sentences. This only had to happen to me a couple of times before I disabled that particular feature.

The program also includes utilities to double the speed of the mouse and to automatically select a window when the cursor is over it and you start typing (although the same caveats applied for me as with the SunMouse mode). There's also a screen blanker built in, just for good measure.

SnapWindows, according to its documentation, is released as an alpha version – and there are indeed a couple of idiosyncrasies that might get on your nerves after a while, including the fact that occasionally the assignment of a window to a key wasn't recognised by the program. However, even with that problem, this is well worth checking out – assuming, of course, that you don't already have one of the other hundreds of utilities that use the function keys for their own dark purposes....

Program rating 8/10

WORKBENCH 2/3 UTILITIES 2

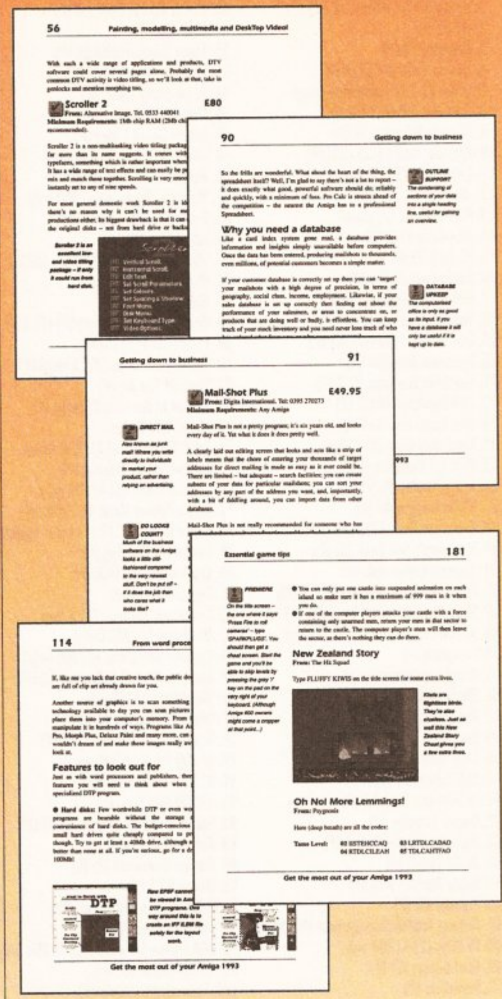
Kew=II disk U1053

This is a rather nice disk if you have a hankering for WorkBench Commodities. It contains 15 of the little suckers, and – in a welcome contrast to disks from some companies – actually has a decent contents document that lists each one and gives a concise description of what it does.

There's no point in listing all the Commodities on the disk, but some highlights include:

• *AppMenu.* adds menu items to the Tools menu in the Workbench. A program can be added simply by dropping its icon on to the Preferences tool – the path will be

Get this book!





Computer art, desktop video, games, 3D modelling, comms, programming, multimedia, business, word processing, desktop publishing, music…

Just £19.95 including 2 disks!

- **300+ pages**
- **90 reviews**
- **50+ game tips**
- **1.5Mb software**
- **Workbench/AmigaDOS reference**

Get the Most out of your Amiga 1993 is the third edition of the best-selling Amiga title first launched in 1991. The aim is simple: to produce the most authoritative, comprehensive and up-to-date guide to the Amiga, its uses and its software.

Separate sections are devoted to specific subjects like music, word processing etc. and they're structured so as to firstly provide background information about that area and secondly offer specific product recommendations.

The Amiga market continues to expand at a terrific rate following last year's hardware launches. Because of this, Get the Most… has been completely rewritten for 1993, and in the process has swelled to well over 300 pages. Also included are two disks packed with specially-selected public domain and shareware software.

The Amiga is the most powerful, versatile and cost-effective computer there is. Find out just what yours can do with Get the Most out of your Amiga 1993.

Get the Most out of your Amiga 1993 — Priority Order Form

Get the Most out of your Amiga 1993 will be available in the shops, but you can order a copy of this book right now, direct from our own Mail Order department. Postage and packing is FREE – you don't even need a stamp to send this order off!

Please send me: (tick as appropriate)

............copy/copies of **Get the Most out of your Amiga 1993** at £19.95 each

Method of payment (please tick one):

VISA ☐ ACCESS ☐ CHEQUE ☐ P/O ☐

CARD NUMBER ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date: ☐☐☐☐

Please tick here if you do not wish to receive direct mail from other companies: ☐

Your name..

Your address...

....

....

Your signature...

Now send this form to:

Future Leisure Books Offer
Future Publishing Ltd
Freepost
Somerton
Somerset TA11 7BR

For office use only:

ORDER CODE: FLB009A

automatically saved, and selecting the menu item will launch the program.
• *Close All Windows.* Does just what it says, with a key command.
• *MouseBlanker.* Turns off the mouse cursor if you haven't moved it within a specified time, or after a certain number of keys have been pressed. This is useful if you're using a word processor or text editor which doesn't hide the pointer itself.


Just one of the 15 images on 3C's Clip Art, from Roberta Smith DTP.

• *QuickGrab.* A screen grabber which works with all graphics modes, and which was specifically written for Workbench 2 and 3 – many of the older grabbers weren't, and therefore have problems with some graphics modes.
• *ToolAlias.* Re-routes requests for one tool to another. The most usual way to use this would be to redirect calls to text displayers such as *More* and *PPMore* to your favourite – *MuchMore,* perhaps.
• *PrintManager.* A print spooler, which should work regardless of whether programs use the parallel or serial devices, and whether they use **PRT:** or the printer device directly.

As well as those listed above, there are plenty of Commodities for things like activating windows with double-clicks and all the other standard Commodity functions. All in all, this is a very worthwhile disk if you are a Workbench 2 or 3 user. And it's well presented, too, with all the documentation tidily together in one drawer.

Value for money 10/10

BOREALIS JUNIOR

Central Licenseware CLE040

This program is sold as an art package for pre-school and infant children – it's aimed to give them enough features to experiment with, but not enough to confuse them. I went into it expecting to love it – I was hoping for a great package, fun and easy to use. Well, it's certainly got a fair number of features, but I'm afraid that I found the user interface just too much of a trial to get used to – and I suspect that a pre-schooler would get fed up with not being able to understand what was going on.

One of the main problems is that there are two screens – one for choosing colours and modes, the other to do the actual painting. You swap between the two using the right mouse button, and you select options and draw using the left button. So already kids have to remember which of the two buttons does what. Then there's the fact that some of the features act rather strangely – for example, **Rub Out** uses whatever pattern has been selected to partially delete material. Surely, in a package for small kids, **Rub Out** should do exactly what its name says and no more?

If you select a nice thick brush, choose **Rainbow** (which colours pixels in different colours, rather than one solid colour), select the drawing screen and make sure that your child only touches the right mouse button, I'm sure that this could be fun for a short time. But to be honest, I wouldn't like to have to supervise a boisterous infant with this package. If you want to try it out, though, it's available from any companies which are part of the Central Licenseware Registry – it costs £3.50.

Value for money 5/10

3C'S CLIP ART

Roberta Smith DTP disk CU321

Clip art is something that you either find useful or can't see the point in at all. This particular disk has 15 files, each with a number of images of houses, castles and churches. They are all drawn black-on-white, and are very accomplished illustrations. They are certainly of high enough quality to be used in newsletters and the like – just crop the image to leave the drawing that you want, and pop it in your publication.

Value for money 8/10

DISK MAGAZINES

Many of today's top science-fiction authors and comic-book creators got their start in amateur fanzines, and the same is true of many special-interest fields – Amiga computing not least among them. There's a wide range of disk magazines produced by Amiga enthusiasts, some of them quite long-running and many of them aimed at specific areas of Amiga usage, from AMOS programming to Imagine graphics. Some are professional-standard, some awful, but the common factor is an enthusiasm for their subject and a love of communicating with like-minded Amiga owners – the best have a friendly, club-like tone. Disk magazines are usually available direct from the compilers, or via PD libraries – either way, the Amiga enthusiasts who put them together are not in it for the money, so they fall into the jurisdiction of this column. Here are some of the latest to cross my desk...

> **"worth taking a look just to see what a front-end should look like."**

N. B. AMOS

This is a brand new disk magazine aimed squarely at AMOS users. It's compiled by Neil Wright and Jonathan Rutherford, and contains news, reviews, articles on programming, and a beginner's section. There are also a few IFF files, and even some music.

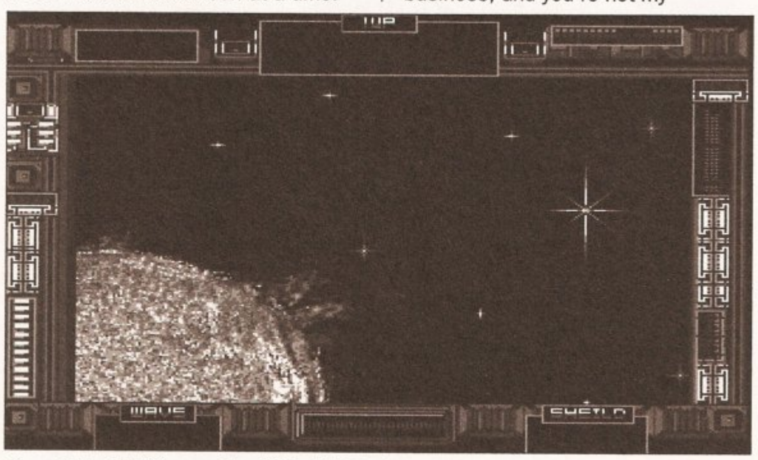
It's obvious that Neil and Jonathan are enthusiasts, and they communicate that enthusiasm well. My main criticism comes in the method they've used to display their text files. One of the guys has written a displayer program – in AMOS, naturally – but it only shows a dozen or so lines on the screen at a time. That's fine if you're reading one of the text-only articles, but what about the beginner's sections, which take the form of a program listing followed by a description of what each line does. Even worse, there's no scroll bar, and you can't scroll using the keyboard – you have to click on the rather small up and down arrows above the text, which then scrolls at less than bionic speed. This is a shame – the menuing system works well, and looks attractive. It's just that I'd prefer to see the screen furniture sacrificed, or at least reduced radically in size, so that more of the text fits on the screen at a time. Indeed, to be honest a standard text viewer might just as well have been used – something like *MuchMore,* which most people are familiar with. I know that it's an AMOS diskzine, but there's no point re-inventing the wheel.

On the other hand, I don't want to sound too critical here – it's a good 'zine overall, and if you're an AMOS programmer it's probably worth you taking a look.

N. B. AMOS costs £2.50 for a single issue, or £24 for one year's subscription (12 issues). It's available from Neil and Jonathan at 39 Riding Dene, Mickley, Northumberland NE43 7DL.

AMIGAHOLICS ISSUE 12

Amigaholics is one of the longer-running disk magazines, and issue 12 is no disappointment. It has a very "clubby" feel, and a sentence from the editor in the editorial section sums this up nicely, when talking to people who let their subscriptions lapse: "This not a business, and you're not my


One of the IFF files on the N.B. AMOS disk magazine – great for AMOS fans.



Showing you the menu screens of disk magazines is boring, so here's a picture by "Thumper" taken from the Amigaholics 'zine.

customers. If you don't want to be a part of this club, please let me know."

The contents are as good as ever: there's a nice strong editorial comment, which isn't afraid to take Commodore to task over its marketing policy; tutorials on Comms, *DPaint* and DTP; a Question and Answers section (are you trying to do us out of a job, guys?); a letters section; contacts requests from people who want to meet like-minded Amiga fans; and loads more. There are also some programs and graphics on the disk, although they aren't accessible directly from the menu (I don't know why...) – you have to exit to the Workbench. When you do so, a rather cute little program called *LEMonWB* is automatically run. This puts three *Lemmings* on to your Workbench screen; as you work, they wander around, climbing, walking on the tops of windows, falling off the sides and parachuting down to the bottom of the screen.... This is a new one on me, and although it's totally pointless and trivial, it's still great! The Gallery section contains a couple of decent Garfield pictures by someone who calls him- or herself Thumper, and there's music as well, in case you're a savage beast in need of soothing.

Amigaholics is one of the most consistently good Amiga diskzines I've seen. The editor, Kevin Bryan, also runs a free shareware library for people who subscribe to the magazine – send him a disk and he'll put software of your choice on it – so that's another incentive to put your hand in your pocket.

The latest issue of *Amigaholics* is available for a modest £1.40 from Kevin Bryan at 49 Coutts House, Charlton Church Lane, Charlton, London SE7 7AS.

THE QUATERMASS EXPERIMENT

I approached this with some trepidation – it was flagged as a Fiction 'zine, covering "mainly science fiction but with some horror and fantasy, reviews and articles." Sci-Fi isn't exactly my favourite genre, but I gave it a go – and whether you like the stories or not, it's well worth taking a look at this two-disk production just to see what a seriously impressive front-end should look like. The graphics are brilliant, the presentation is impressive, it's easy to navigate around the articles – and it's all been written in AMOS!

After a loading screen and a couple of great graphics, the main menu appears. It has a fractal motif (sorry, we can't show it here – the usual screengrabbing problems...), and is very easy to use. The controls are well marked, and there's even a "bleeper" button – some of the stories contain some strong



The Quatermass Experiment: worth looking at even if you're not interested in SF as such, this is one of the best-looking disk magazines yet to appear.

UK PD HOUSES

***An asterisk by a library's name means see its advert in this issue for further details.**

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea, SA5 7EH.

Amiganuts United, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

***Anglia PDL,** 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW, ☎ 0394 283494.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Batty's PD. Contact Ian or Lynn Battison, 7 Denmark Road, Northampton NN1 5QR ☎ 0604 22456. Life membership £3.99.

Belshaws PD. 55 Baldertongate, Newark, Notts. NG24 1EU, ☎ 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN, ☎ 0535 667469.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN, ☎ 0484 516941.

C and C PD. Contact Chris Wildman, 3a The Cedars, Tilehurst, Reading, Berks. RG3 6JW, ☎ 0734 411131.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD. Free, non-profit-making PD, membership £5 per year. Contact Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB, ☎ 0492 533442.

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 0PE. ☎ 021 779 6368

CP PD, 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 0EJ, ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL, ☎ 0709 829286.

Deja Vu, 7 Hollinbrook, Beech Hill, Wigan WN6 7SG, ☎ 0942 495261.

Diskovery PD, 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ, ☎ 0274 880066.

Essex Computer Systems, 118 Middle Crockerford, Basildon, Essex, SS16 4JA, ☎ 0268 553963.

Eurodisk PD, PO Box 2, Radlett, Herts WD7 8QL.

***Express PD,** 47 Aberdale Road, West Knighton, Leicester LE2 6GD, ☎ 0533 887061.

George Thompson Services, Bridgegate Centre, Martinfield, Welwyn Garden City, Herts. AL7 1JG, ☎ 0707 391389.

***GVB PD,** 43 Badger Close, Maidenhead, Berks. SL6 2TE, ☎ 0831 649386.

Highland PD. Free list contains lots of education, business and games disks. Contact David Paulin, 255 Drumrossie Avenue, Inverness IU2 3SX ☎ 0463 242431.

Hornesoft PD. Contact Chris Horne, 23 Stanwell Close, Wincobank, Sheffield S9 1PZ, ☎ 0742 422000.

ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT, ☎ 081 346 0050.

Immediate Arts, 26 Lyndhurst Gardens, Glasgow G20 6QY. ☎ 041 946 5798.

Judge Dredd's PD, 1 Nottingham Road, South Croydon, Surrey CR2 6LN.

Kew=II Collection, PO Box 672, South Croydon, Surrey CR2 9YS,

language, so if you find yourself offended by such things, click on the button and the words will be replaced by stars. Very considerate.

The actual text contents of the disk are well written, and it's clear that this isn't the first time "Professor Quatermass and Dr Rodney" have put pen to paper (or, indeed, finger to keyboard). There are some short stories and even a novella on the disk, as well as reviews of books and games. I have to confess that I didn't get very far with the stories (as I've said, I tend to steer clear of sci-fi), but what I read looked pretty good. I have to take issue with one of the book reviews – anyone who can say that Steven King's *It* is good has a serious problem (and I'm a King fan) – but apart from disagreeing with the conclusions of that particular piece, I have to say that the whole thing is extremely professional.

Yes, there are some "rude words". But, let's face it, even the prime minister uses them these days. If you can't deal with that, don't get *The Quatermass Experiment*. But anyone who wants to see an extremely impressive-looking, professionally-produced disk magazine should be writing a cheque right now.

The Quatermass Experiment should be available from various PD houses, or you can get it directly from the authors by sending your cheque for £2 to Immediate Arts, 26 Lyndhurst Gardens, Glasgow G20 6QY.

DIGITAL DISK AMIGA

This is the first issue of what the authors hope will be a multi-format, fortnightly disk magazine. It's published for the Amiga, PC and ST/Falcon, so if all goes well there should be some interesting debate between the owners of those different machines. Much of the 'zine's content is common to the three different platforms, although there are Amiga-specific sections such as graphics and "The Technical Touch". The "team" say in their introduction that this first issue should only be taken as a sampler, and not too representative of forthcoming issues – and if that's the case, then I must say that it looks like it may become interesting. There are some things that need tightening up, and a couple of features that I could happily have lived without – such as an "interactive adventure", where the readers get to vote on the direction that an ongoing story takes each month, but which I vote should be trashed immediately. Fans of disk magazines with loads of music, flashy graphics and so on certainly won't be too impressed with *Digital Disk* – it's text only, because of the fact that it's published for three different formats – but, assuming subscriptions take off and the authors manage to get it out fortnightly, this could become an interesting forum for debate between the owners of different machines.

You can get issue 1, the trial issue, directly from Digital Disk Publishing, 70 Donald Drive, Chadwell Heath, Romford, Essex RM6 5DU by sending in a blank disk and a stamped, self-addressed envelope. Subscriptions will be £8 for two months (four issues), or £20 for six months (12 issues). AS

WHERE TO GET IT

There are two main ways to get hold of Amiga PD and shareware: from a bulletin board or from a PD library.

The advantage of using a bulletin board (BBS) is that often the latest software is uploaded as soon as it's available. On the downside, you need a modem to connect, and you'll have to pay phone charges (and sometimes a connection fee to the BBS as well).

There is a growing number of BBSs with a wide range of Amiga software available for download. Check out 01-for Amiga (071 377 1358) and the Cheam Amiga Bulletin Board (081 644 8714). Another good option is joining CIX (the Compulink Information eXchange), which not only has Amiga software but also contains conference and file areas on a wide range of subjects. Many of the *Amiga Shopper* writers have accounts on CIX, so you can get first-hand advice on your problems, too. For more details, call CIX on 081 390 8446 (voice) or 081 390 1255 (modem).

If you don't want to use a BBS or haven't got a modem, the other way to get PD software is from a PD house. Many advertise in *Amiga Shopper*, and there's a full directory below. Expect to pay between 99p and about £2.50 per disk – there's often a discount if you buy in bulk, too. As for the difference between companies which charge 99p and those which charge £2.50 – well, try both types. There are brilliant, totally professional PD houses which charge less than a quid, and total incompetents which charge more than twice that.

UK PD HOUSES

☎ 081 657 1617.

KT's PD. 75 The Drive, Rochford, Essex SS4 1QQ, ☎ 0702 542536.

Langham PD. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WV8 1PL

Logic PD, 8/5 Glenalmond Court, Sighthill, Edinburgh EH11 4BE.

Mythril PD, PO Box 68, Romford RM6 6LY.

NBS, 1 Chain Lane, Newport, Isle Of Wight, PO30 5QA, ☎ 0983 529594.

***Network PD & Shareware Library,** Kenmare, Co. Kerry, Eire. ☎ 010 353 64 41603

Numero Uno. Contact Dillon Eyre, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP, ☎ 0262 671125.

Orbital Software. Contact A Flowers, 37 The Orchard, Market Deeping, Peterborough, Cambs. PE8 8JR, ☎ 0778 342064.

Pathfinder PD, 41 Marion Street, Bingley, W Yorks. BD16 4NQ, ☎ 0274 565205.

***PD Soft,** 1 Bryant Ave, Southend-on-Sea, Essex, SS1 2YD, ☎ 0702 466933.

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN, ☎ 0734 452416.

Roberta Smith DTP, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE, ☎ 081 455 1626.

Sector 16, 160 Hollow Way, Cowley, Oxford, ☎ 0865 774472.

Seventeen Bit Software, PO Box 97, Wakefield, West Yorks WF1 1XX, ☎ 0924 366982.

Softville, 35 Market Parade, Havant, Hants PO9 1PY ☎ 0705 498199

Software Expressions, Unit 4, 44 Beauley Road, Southville, Bristol BS3 1PY, ☎ 0272 639593.

Startronics, 4 Arnold Drive, Droylsden, Manchester M35 6RE, ☎ 061 370 9115.

Tazmania PD. Contact M Hewson, 4 Boultham Avenue, Lincoln LN5 7XZ, ☎ 0522 538706 (after 6 pm).

Telescan Computer Services, Handsworth Road, Blackpool FY5 1SB, ☎ 0253 22296.

Trevan Designs Ltd, PO Box 13, Aldershot, Hants. GU12 6YX, ☎ 0483 725905 (note: modem line, not voice).

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ, ☎ 091 587 1195.

Virus Free PD, 31 Farringdon Road, Swindon, Wiltshire SN1 5AR ☎ 0793 512321

***Visage Computers PDL.** 18 Station Road, Ilkeston, Derbyshire DE7 5LD, ☎ 0602 444501.

BUYER BEWARE: The inclusion of a PD library in this directory does not imply that *Amiga Shopper* endorses or recommends any PD library in any way. We can accept no responsibility for any dealings you may enter into or for any difficulties you may encounter.

When you write to any of these libraries for a catalogue, include an SAE for its return. Some libraries ask that you send a blank disk as well.

If a library is named in a review, this means that that library provided us with the disk reviewed. Given that PD can be freely copied, the same program may well be available legitimately from several libraries.

• If you run a PD library not listed here and wish to be included, or if you want to amend any information given, send full details and a copy of your latest catalogue to:
PD Directory, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Reader Ads

...or your chance to reach 50,000 fellow Amiga owners for only a fiver.

FOR SALE

Amiga 4000, two 1Mb x 32 SIMM modules £50 each. *Scala 500* boxed with manual £45. ☎ Dave on 0602 321007.

Amiga 1500, 80Mb HD, VXL 30/40 accelerator, 5Mb RAM, flicker fixer, A2300 genlock, 2 DD, WB 2.04, software, offers around £800. ☎ Peter 0947 820008

Vista Pro 3.0 landscape generator, 4Mb Fast RAM required to run, £40. Dr T's *Tiger Cub* £30. Both boxed. ☎ 0403 242102 W. Sussex.

Amax plus ROMS! plus Apple drive £225 ONO. WB 2.04 ROM, new, unused £28 ONO. Trilogic ROMshare (keyboard switch), new, unused £22 ONO. ☎ Derek 0636 812712 days.

Amiga A1500, WB 2.04, GVP 52Mb hard drive, 5Mb RAM, 1084S monitor, *Wordworth* v2, *Quarterback* v5, *Monkey Island 2, SID 2 Professional.* Includes desk / workstation, all leads etc. £500. Buyer to collect. John, ☎ 0709 865997. (Doncaster, S. Yorks.)

SAS C 6.2, one month old, still unregistered, £170. WB 2.04 upgrade pack, as new, £50. 1Mb expansion with throughport £20. ☎ Ian 0234 741226.

Amiga 1500+ WB 2.04, GVP 120Mb HD and 4Mb Fast RAM, software, joysticks. May split £600. ☎ 071 736 5721 after 7pm.

Amiga 500, 1Mb RAM, extra disk drive, software, books and joystick. All boxed as new. Offers invited over £180. ☎ 0457 869137 after 6pm.

A500 Roctec 120Mb hard drive, 1.2Mb/s Xfer, £250. Blizzard Turbo 14MHz accelerator. 4.5Mb memory installed £150. *Prodraw* v3 boxed as new £50. All above £350. ☎ 0509 812983 after 7pm.

A500, WB 1.3, 1Mb, 1084S monitor, external drive, joystick, loads of games, all original. Loads of magazines and disks. *F19, F16, F29, FOFT, Elite, Kickoffs* and more. All for £300. ☎ 0732 883691

Vista Pro 3, boxed as new, not used, requires WB 2.04 and 4Mb RAM, £45, quick sale required. ☎ Neil on 0302 721693

A500 Plus, 2Mb Chip RAM, boxed with manuals and software, etc. Genuine reason for sale. Games and software available, all originals. Call for details. £175 ONO. ☎ 0308 56945 evenings.

GVP A530 with 80Mb hard disk, 68030 40MHz accelerator and 1Mb of 32-bit RAM. Only six months old, still under warranty. All installation software/manuals included. Will sell for £500. ☎ 0705 376032

A2000, WB 2.04, 3Mb RAM, twin floppies, 52Mb Quantum HD, flicker fixer, A2286 PC bridgeboard, 1.2Mb 5.25inch drive, SVGA card, all disks and manuals. Excellent condition. £800 ono. ☎ 0799 527336

Wordworth £40. *XCAD* designer £40. *XCAD Pro* £95. *DPaint 3* £25. *Superbase Per 2* £10. *Top Form* £25. *CrossDOS* £25, plus games. ☎ Maidstone 0622 747486

Amiga 500+ 43Mb external Reference hard drive, 1Mb Chip, 2Mb Fast RAM (3.5in), external drive Panasonic KXP1123 B-&-W printer + cut sheet feeder + extras, £550 ☎ Simon 0922 685055 (6pm)

A500 WB 1.3, Checkmate upgrade 65Mb HD, 3Mb RAM, ICD flicker fixer, NEC M/sync monitor, second floppy plus accessories, £750 ☎ Maidstone 0622 747486

GVP 52Mb for A500, £190. 8Mb Fast RAM for GVP, £120. PC 286 emulator for GVP, £50. All for £350. ☎ Sean 0243 820068 evenings.

GVP HD8+ 60Mb hard drive for A500(+) with 2Mb Fast RAM £260. ☎ 0904 789243

Amiga 1500, WB 2.00, 6Mb RAM, 1084 monitor, together with external disk drive, *Superbase Personal, Protext, Prodata* and some game software. All for £375. ☎ 081 989 3651 evenings.

Supra 2Mb expansion for A500 £65. *Pagesetter 2* £15. *The Publisher* £20. Both incmanuals. ☎ Russell 0534 68390 after 6pm

GVP 120Mb HD8+ for Amiga 500. 4Mb RAM. Also Amiga 500 computer, 10 games, mouse, joystick, books, A5000 accelerator (1Mb). All in excellent working condition, £550. ☎ 0935 24150.

Amiga 1500, two disk drives, 3Mb RM, 52Mb GVP hard drive, Workbench 2.0 and 1.3 with switcher, mouse, Master Sound sampler, only £600 ONO. Phone Geoff on 0602 728518.

A2000, WB2.0, 3Mb RAM, 40Mb hard disk, second floppy drive, Super Denise, 1084S monitor, AMOS and Compiler. Whole system fully boxed, pristine condition, £500. ☎ 091 489 1718.

A500 1.3, 1Mb Chip, GVP 52Mb HD with 2Mb fast, both boxed, with software, mouse, and joystick, £350. DScan Pro scanner and version 2 software, £70. ☎ Richard 0443 208495.

X-CAD 3000, top 3D computer aided design program, complete with manual and dongle, save £100 – only £150. Also *Professional Draw 2,* boxed with manual, £50. Call Jon anytime ☎ 081 863 6929.

A2000, two drives, WB 1.3/2.04 with SCSI interface, £290. CSA-MMR 33MHz 68030, SRAM 2Mb 32-bit DRAM £330. Zorro II 8Mb RAM expansion £150. 660Mb Seagate SCSI hard disk £420. CM8833 monitor £120. Steve ☎ 0273 738839.

FANZINES

Interfacing. Are you interested in connecting your Amiga to the external world? Circuits, software and ideas on disk. Just £2. Martin Hillier, 19 Lower Stoke, Limpley Stoke, Avon, BA3 6ET.

It's only £5 to sell your used hardware and software in *Amiga Shopper*

Sell your excess hardware and software with *Amiga Shopper* Reader Adverts. Just fill in the form and send it to us along with a cheque (made payable to Future Publishing) or postal order for £5. But **BE WARNED.** This magazine is not a forum for selling pirate software or other illegal goods. Software must include all issue disks, manuals and a signed statement that all other copies have been destroyed. Please advise us if you are offered pirate or copied software by advertisers. All ads are accepted in good faith. The editor reserves the right to refuse or amend ads. We accept no responsibility for typographical errors or losses arising from the use of this service.

Trade ads will not be accepted, including anyone advertising the sale of PD software.

Issue 30

Name ....

Address (not for publication) ....

....

....

Postcode .... **Date** ....

Tel ....

Tick one box to show required section heading

For sale ....❑

Wanted ....❑

Personal ....❑

Fanzines ....❑

Use one space for each word. Only the words in this section will be printed.

Return with your cheque to: Reader Ads, *Amiga Shopper,* 30 Monmouth Street, Bath, Avon BA1 2BW

Unfortunately we cannot guarantee insertion in a particular issue.

I have read and understood the conditions for the inclusion of my ad.

Signature ....

AMIGA FORMAT SPECIAL



INCREASE YOUR PLEASURE

100% GAMES!

Archer Maclean
Andy Braybrook
Geoff Crammond
The Hidden
Mev Dinc
Revolution
Jeff Minter
David Braben
Steve Kelly
Asylum
ODE
Sid Meier
Sensible
MicroProse
Bullfrogs

+

How to be ridiculously well-versed in games in two minutes…

What kind of gamer are you? The personality test to end all personality tests

+

In-Depth Interviews with the stars

+

What the reviewers really think – featuring Stuart Campbell

More than your regular monthly dose of Amiga gaming

BACK ISSUES

Complete your collection and catch up on all the reviews, tutorials and features you've missed!



AMIGA SHOPPER BINDER ONLY £4.95
Keep your copies of *Amiga Shopper* safe and in order – build up a valuable reference collection!



ISSUE 2
2D Paint packages reviewed and rated, PLUS which programming language is the one for you. £3

ISSUE 3
Accelerators round-up; BASIC versions compared. ..£3

ISSUE 4
Ten of the most popular printers checked out PLUS creating a structured drawing package with C. £3

ISSUE 8
Complete guide to buying Amigas and related hardware PLUS a review of the HAM-E graphics system. £3

ISSUE 9
Complete Amiga software guide; satellite links. £3

ISSUE 10
How to draw with *Deluxe Paint* PLUS a guide to the best sound samplers available. £3

ISSUE 11
CDTV and its software PLUS KCS's PC emulator. £3

ISSUE 13
FREE Tracy covermount and animation special, not forgetting our in-depth guide to memory..................£3

ISSUE 14
15 memory expansions; buying a hand scanner. £3

ISSUE 15
The best in PD software – how to set up a complete software system for nothing. £3

ISSUE 16
200 top tips – advice on everything from accelerators to Workbench, BASIC to WPs, C to video... ....£3

ISSUE 17
Top DTP packages, PLUS Epson flatbed scanner. ...£3

ISSUE 18
Amiga Answers special PLUS chaos tutorial........... £3

ISSUE 20
Step-by-step guide to ray-tracing, accelerator round-up PLUS review of the Opalvision graphics board. £3

ISSUE 21
Amiga Shopper Awards for the best in hardware and software. COVER DISK: CompuGraphic fonts, DirWork filemanager, screen blanker, ICalc calculator, LhA archiver, PowerSnap 2 text cut-and-paste utility, RDES encryption software, ReOrg disk reorganiser, Safe Delete, SPClock, SysInfo and Virus Checker........... £4

ISSUE 22
20 printers reviewed PLUS beginner's Amiga guide. £3

ISSUE 23
How to fit a hard drive to an A600 or A1200. COVER DISK: Alert translates guru numbers, Cycle To Menu creates pop-up menus, Kwikbackup copies hard drive to floppies, LhA archiver, ReqTools creates requesters, SnoopDOS gives info on programs, Virus Checker, plus a complete assembler and linker package............. £4

ISSUE 24
RAM – what it is and what to buy in our in-depth round-up PLUS DIY hardware repairs. £3

ISSUE 25
Nine top word processors reviewed and rated. COVER DISK: EdWord text editor/WP, AZSpell spelling checker, CompuGraphic fonts, Virus Checker......... £4

ISSUE 26
The Amiga Exposed tells you exactly how your Amiga works PLUS legal advice in Amiga Advocate. £3

ISSUE 27
Upgrade your A500 to A1200 level PLUS accelerator round-up. COVER DISK: OctaMED music package, XOper systems monitor, Move file mover, JuliaMove fractal animation program, Pest appointment scheduler, source code and Virus Checker. £4

ISSUE 28
Make money with your Amiga PLUS Emplant Mac emulator, Amiga animations on TV. £4

ISSUE 29
Computer crime and how to protect yourself from it – hacking, viruses, piracy, and pornography. PLUS Power XL high-density external floppy drive, Ami-Back hard drive back-up system and Microbotics MBX1230 accelerator for the A1200 reviewed and rated........ £4

BACK ISSUES • ORDER FORM

AS30

SEND THIS FORM (no stamp required) TO:
Amiga Shopper, Future Publishing Ltd, FREEPOST, Somerton, Somerset, TA11 7BR
Do not send cash through the post with your mail orders
Please make all cheques payable to Future Publishing Limited

BACK ISSUES

Please tick the issues you require:

Prices listed are per copy and include postage and packing.
*Asterisk denotes issues with cover disk included

Issue numbers not listed are sold out

❑ 2	❑ 3	❑ 4	❑ 8	❑ 9	❑ 10
❑ 11	❑ 13	❑ 14	❑ 15	❑ 16	❑ 17
❑ 18	❑ 20	❑ 21*	❑ 22	❑ 23*	❑ 24
❑ 25*	❑ 26	❑ 27*	❑ 28	❑ 29	

Total amount payable: £ ❑❑.❑❑ ❑ BINDER £4.95

Name..
Address..
....
....
Post code..
Telephone No..
Method of payment (please circle) Access • Visa • Cheque • PO •
Credit Card No..................................Expiry Date..........................
Signature..

PRODUCT LOCATOR

PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN • PUBLIC DOMAIN

Amiga Shopper **Buyer's Guide tells you what's hot and what's not in the Amiga market place. It's a comprehensive guide to help you make the right buying decisions. We'll be updating it as new products are released.**

This month we deal with public domain software. For reasons of space, it may not include each and every PD product ever produced for the Amiga, but rest assured that all the major titles are here.

BUSINESS SOFTWARE

Program	Library	Disk	Type	Issue	Rating
AMaster	Fred Fish	Fish 824	Simple Adress book database	27	**
AZSpell	Digitz	Utl277	Spell checker	13	****
Account Master	Various	–	Home accounts program	19	****
AmiBase Pro 3	AmigaNuts	–	Powerful database	9	****
AmiCash	PS Soft	V630	Home accounts	16	***
AmigaDex	PD Soft	V757	Pop up address book	19	*****
AmigaFox	Office Choice	U173	Combine text with graphics	8	**
Atbl	Fred Fish	Fish 746	Unix-like table formatting utility	22	****
BBase III	Fred Fish	Fish 860	Powerful database program	28	*****
BuddBase 1	Deja Vu	L/28	Powerful database program	22	*****
Cruiseword	PD Majik	–	Word processor	16	**
DataBench	Fred Fish	820	Very good PD database	26	****
EasyBanker	GTS	Home2	Home finance program	10	****
Epoch	NBS	U726	Pop up address book and calendar	22	**
Forms Really Unlimited	PD Soft	V782	Create your own business forms	21	*
Home Business Pack	Anglia PD	HB1	Database, spreadsheet, wp	25	*****
Home Manager	PD Soft	V660	Personal organiser	16	*****
HomeHelp	GTS	Home1	Computerised grocery lists	10	****
I-Man	GTS	Home2	Inventory list management	10	***
Inspire Demo	Fred Fish	815	Powerful word processor	26	*****
JCGraph Demo	Fred Fish	Fish 760	Demo of shareware graph program	23	*****
Liner	Fred Fish	285	Ideas processor like Flow	10	****
MultiPlot	Fred Fish	467	Data graphing program	7	****
NewPRT	Digitz	149	Printer drivers for PageStream	10	****
PageStreamFonts	Digitz	149	Fonts for PageStream	10	*****
PaperBack!	Fred Fish	Fish 749	Create printed booklets with ease	22	*****
Philo	Startronics	N/A	Databases for beginners	21	*
Power Base	Deja Vu	Licenseware	Database	15	*****
Power Planner	Deja Vu	Licenseware	Diary/telephone book	15	***
PowerSnap	Fred Fish	542	Grab screen text as ASCII file	8	*****
PowerText	Deja Vu	Licenseware	Word processor	18	*****
QuickFile	Fred Fish	820	Absolutely awful PD database!	26	None!
Stock Control 1.0	Deja Vu	L/111	Powerful stock control utility	23	****
TextEngine 3.0	Digitz	277	Word processor	13	***
TextPlus 3.0	PDSoft	V261	Word processor	1	****
UEdit	AmigaNuts	1162	Text editor	8	****
WBase	Anglia PD	U4015	Pop up Workbench database	18	**
WFILE	Fred Fish	776	Convert PC and Mac text files	24	****
Will&Testament	PD Soft	V706	Template for wills	19	*****
Word Power	Deja Vu	Licenseware	Spell checker	17	****
WordWright	PDSoft	V28	Word processor	13	****
CDTV Player	Fred Fish	Fish 759	Play Audio CDs from WB on A570	23	*****

MUSIC UTILITIES

Program	Library	Disk	Type	Issue	Rating
CZED	Fred Fish	223	Patch editor for Casio synths	10	*****
Desktop Harp	Various	–	Collection of tunes	18	*****
K1 Editor	Fred Fish	332	Patch editor for Kawaii K1	10	*****
MED 3.11	AmigaNuts	973	Sound Tracker	1	*****
Module Master	TBAG	58	Play modules in various formats	9	****
Module Processor	AmigaNuts	864	Convert modules to executable	1	***
Nutcracker Suite	17-Bit Software	N/A	Tchaikovsky's Nutcracker suite	21	****
Rippers Disk	17Bit	1055	Rip modules from memory	5	****
Sound Ed	Fred Fish	486	Sample editor	5	****

EMULATORS

Program	Library	Disk	Type	Issue	Rating
A64	AmigaNuts	1030	Commodore 64	3	*****
IBEM	VirusFree	1485	PC compatibles	3	****
QL Emulator	AmigaNuts	1030	Sinclair QL	3	***
ST Emulator	Digitz	Utl149	Atari ST	15	***
ZX Emulator	AmigaNuts	1030	ZX Spectrum	3	****

VARIOUS UTILITIES

Program	Library	Disk	Type	Issue	Rating
A-Gene	AmigaNuts	933	Genealogy program	1	****
ABackUp	Fred Fish	Fish 759	Hard Disk backup utility	23	****
AIBB	PD Soft	V948	Standard benchmark program	25	*****
ARTM	17Bit	1274	System monitor	7	*****
ARestaure	Fred Fish	Fish 760	Restore deleted files	23	*****
AWP	Fred Fish	554	Animate WB2.0 clock pointer	11	****
AniMan	Fred Fish	722	Voice control your Amiga	20	***
Anti-Virus	Soft Expression	U155	Kill those viruses	19	*****
AppiSizer	Fred Fish	Fish 853	Find out size of drawer easily	28	*****
Arq	CIX Download	–	Improved system requesters	8	*****
Assassins Handy Tools	Aardvark PD	U186-188	Three disks of handy utilities	23	***
Astro 22	PD Soft	V685	Astrology program	17	****
AutoSave	Fred Fish	771	Execute ARexx script at regular intervals	24	****
Avail Mem	Fred Fish	285	Graphical memory monitor	10	***
BackUp	Fred Fish	724	Hard disk back-up utility	20	*****
Badger	Fred Fish	543	Event scheduler	13	***
Banner	TBAG	52	Print huge banners	10	****
Boot Logo	Fred Fish	Fish 754	Display picture during boot up	23	****
BootJob	Fred Fish	Fish 760	Store game bootblocks on disk	23	**
ButExchange	Fred Fish	494	Reverse mouse buttons	9	****
C Commands	PD Soft	V586	Even more CLI commands	18	***
CFX	Fred Fish	Fish 750	File type identifier	22	*****

PRODUCT LOCATOR

CG Fonts	PD Soft	V713	Lots of Compugraphic fonts	19	****
Cass 1.1	**Fred Fish**	**579**	**Make your own cassette covers**	**13**	***
ClockTick	TBAG	58	2.0-like clock mouse pointer	9	****
Command.COM	**17Bit**	**866**	**CLI commands in RAM**	**2**	***
Cook & Stitch	GTS	-	Learn to cook, stitch and brew beer!	25	***
Date2Day	**Fred Fish**	**Fish 826**	**Tells you day when given date**	**27**	*
DCopy	AmigaNuts	700	Disk copier	10	****
DeafLab	**Fred Fish**	**494**	**Sign language utility**	**9**	***
DevRen	GTS	Utils1	Rename devices including DF0	10	****
Disk Manager 2	**Various**	**-**	**Disk cataloguing program**	**20**	****
DiskMate	Fred Fish	754	Powerful Workbench disk copier	28	*****
DiskSpeed	**GTS**	**Utils1**	**Disk drive benchmark program**	**10**	****
Distance	Deja Vu	Licenseware	HAM radio utility	20	****
DragIt	**Fred Fish**	**792**	**Drag a window without using drag bar**	**25**	*****
Ego Mouse	Fred Fish	778	Make your mouse point where it's going	24	**
Electronic baby book	**PD Soft**	**V658**	**Record your baby's details**	**16**	****
Elements	Fred Fish	593	Periodic table of elements	13	****
FastDiskII	**GTS**	**Utils1**	**Disk optimiser**	**10**	***
FastIntroMaker	Fred Fish	814	Create your own scolly demos	26	****
File & HD Utilities 6	**PD Soft**	**V978**	**Selection of file and hard disk utilities**	**25**	**
File & HD Utils 3	PD Soft	V815	Various file and hard disk utilities	21	****
File and HD management	**PD Soft**	**V573**	**Hard drive utilities**	**15**	*****
File and HD management 2	PD Soft	V575	More hard drive utilities	16	***
FileMaster	**GTS**	**Utils1**	**Binary file editor**	**10**	*****
FileSearch	Fred Fish	531	Find files on a hard disk	11	***
Filer	**Fred Fish**	**562**	**SID clone for Workbench 2.0**	**11**	****
FindIt	Fred Fish	Fish 731	Search for named files on any disk	22	****
Flash Disk	**GTS**	**Utils2**	**Disk optimiser**	**10**	****
Font Manager	Digitz	149	Manage your bitmap fonts	10	****
Fontviewer	**Fred Fish**	**Fish 732**	**Keep track of all your bitmapped fonts**	**22**	****
Format 1.1	Fred Fish	535	Replacement disk formatter	11	*****
Formatter	**GTS**	**Utils1**	**Replacement disk formatter**	**10**	***
GeoTime	Fred Fish	Fish 758	World Time Zone Display	23	*
GrabKick	**Fred Fish**	**Fish 831**	**Grabs Kickstart ROM to disk file**	**27**	****
GraphPaper	Fred Fish	Fish 851	Prints graph paper to printer	28	***
HAM Radio	**Aardvark PD**	**-**	**HAM radio utilities**	**18**	****
HAMLab 2 Demo	Fred Fish	726	Powerful image processor	20	*****
Hard Drive Special	**GTS**	**-**	**Collection of hard drive utils**	**9**	*****
Hyper	Fred Fish	Fish 853	View AmigaGuide files	28	*
Icon Mania	**PD Soft**	**V730**	**Lots of new icons**	**19**	**
Imploder	Fred Fish	422	File compressor	7	***
InputLock	**Fred Fish**	**494**	**Turn off mouse and keyboard**	**9**	****
Install 1.2	Fred Fish	817	Workbench Install disk utility	26	*****
KeyCall	**Fred Fish**	**Fish 854**	**Load programs via hotkeys**	**28**	*****
KingFisher	GTS	-	Database of Fred Fish disks	5	*****
LC24-200 Fonts	**NBS**	**L503**	**Fonts for Star printers**	**8**	****
LS	Fred Fish	772	Very powerful Unix-like 'LS' command	24	*****
Label Print	**Fred Fish**	**227**	**Disk label printer**	**10**	***
LabelMaker	Fred Fish	548	Create disk labels	11	***
LockDevice	**GTS**	**Utils1**	**Better AmigaDOS 'Lock' command**	**10**	****
LockIt	Fred Fish	798	Password protect your files	25	****
MKSLens	**Fred Fish**	**574**	**Magnify area of screen**	**11**	***
Macro 1.0	Fred Fish	786	Record and playback user inputs	24	****
Magnetic Pages	**PD Soft**	**V688**	**Create your own disk magazine**	**17**	*****
Main Event	Soft Expression	U149	Event scheduler	20	****
Master Virus Killer	**AmigaNuts**	**971**	**Virus killer**	**1**	****
MegaStation	Five Star PD	U195	More CLI commands	18	***
Megad 2.0	**Fred Fish**	**Fish 736**	**Brilliant SID-like directory utility**	**22**	*****
Menu Runner	AmigaNuts	1024	Run programs from menu	8	***
MessyDOS	**NBS**	**U619**	**Read and write PC disks**	**6**	*****
MessySID 2	PDSoft	V490	Access PC disks with ease	13	*****
Minix Demo	**PD Soft**	**V711**	**Demo of Unix-like OS**	**19**	*****
Morse Tutor	Deja Vu	L101	Teach yourself Morse Code	19	*****
New Aqua	**Fred Fish**	**Fish 837**	**Database of Fred Fish library**	**27**	*****
NicePrefs	Fred Fish	780	Extra WB 2.0 Preference programs	24	*****
Outline fonts	**George Thompson**	**-**	**For ProPage and PageStream**	**16**	*****
PWKeys	Fred Fish	494	Manipulate windows with hotkeys	9	***
Pager	**Fred Fish**	**Fish 824**	**Add page numbers to documents**	**27**	***
Password	Fred Fish	804	Password protect a hard drive	26	****
Pools Tools	**NBS**	**U725**	**Pools predictor**	**22**	***
PopUpMenu	Fred Fish	Fish 756	Modified Workbench menus	23	****
Post	**Fred Fish**	**Fish 828-830**	**PostScript interpreter**	**27**	*****
PowerPacker Utils	Fred Fish	542	Utilities for PowerPacker	11	***
Printer Drivers	**PD Soft**	**V724**	**Star and Canon printer drivers**	**19**	*****
QC	Fred Fish	788	Display information on CLI/Shell	24	***
QDisk	**Fred Fish**	**Fish 853**	**Get size of AmigaDOS volumes**	**28**	****
QMouse	Fred Fish	789	Mouse accelerator utility	24	*****
RMBShift	**Fred Fish**	**547**	**Select multiple icons**	**11**	****
Recover	Digitz	149	Rescue files from corrupt disks	10	***
RunMe	**AmigaNuts**	**1186**	**Run programs from menu**	**9**	*****
S-Text	Fred Fish	Fish 760	Create stand-alone text files!	23	**
School TimeTable	**AmigaNuts**	**1100**	**Generate school timetables**	**5**	***
ScreenMOD	TBAG	58	Modify screens and windows	9	***
SetNoClick	**GTS**	**Utils1**	**Turn off annoying drive click**	**10**	***
Sid 2	17Bit	-	Directory utility	16	*****
SingleFile	**Fred Fish**	**Fish 851**	**Checks hard disk for duplicate files**	**28**	***
Sksh	Fred Fish	791	Unix 'ksh'-like Shell	25	*****
Smart Icon	**Fred Fish**	**316**	**Iconifies windows**	**10**	***
Snap 1.4	Fred Fish	326	Grab screen text into clipboard	10	****
StarClock	**Fred Fish**	**814**	**Display time in StarTrek fashion**	**26**	***
SuperDark	Fred Fish	Fish 835	Modular screen blanker	27	****
Super Format	**Fred Fish**	**Fish 835**	**Workbench 2.1-like disk formatter**	**27**	*****
SysInfo	Fred Fish	571	System information program	11	*****

PUBLIC DOMAIN

PRODUCT LOCATOR

SysInfo 3.11	Fred Fish	–	Latest version of system analyzer	26	*****
ToolsDemon	Fred Fish	561	Run programs for 2.0 Tools menu	11	****
Touch typing tutor	NBS	CLU03	Teach yourself touch typing	17	****
Track Display	GTS	Utils1	Shows position of drive heads	10	***
Twilight Zone	Fred Fish	782	After Dark-like screen blanking utility	24	*****
UnixDirs	Fred Fish	Fish 850	Unix-like directory movement	27	*****
VCR Tape Filer	Fred Fish	721	Organise your video collection	20	***
VirusZ	Fred Fish	786	Virus Killer	26	*****
WordFinder-Plus	Virus Free PD	Licenseware	Crossword puzzle solver	21	****
Words 3	AmigaNuts	–	Solve anagrams	9	***
X-Stitch	Deja Vu	Licenseware	Pics to knitting patterns	19	****
XSearch	Fred Fish	804	File searching utility	26	***

COMMS UTILITIES

All 1.35	fred Fish	825	Intuition-based archiving toll	27	****
BBBBS	Fred Fish	729	Bulletin Board System	20	****
LHA 1.11	Fred Fish	593	Archiving utility	13	****
NComm	17Bit	1275	Terminal Program	7	****
Phone Line Watcher	TBAG	58	Keep track of phone bill	9	****
Term 3.1	Fred Fish	Fish 831-833	Best Amiga comms program available	27	*****

PROGRAMMING UTILITIES

Acc Assembler	AmigaNuts	–	Fast Assembler	6	*****
Amiga E	Fred Fish	–	Programming language compiler	26	****
Amiga Pascal	Fred Fish	Fish 849	Amiga version of Pascal language	27	****
BRef	Fred Fish	494	BASIC cross referencing utility	9	****
Copper Master	AmigaNuts	1083	Generate Copper Lists	5	***
DICE	Fred Fish	443	C Compiler	3	*****
DPU	Fred Fish	721	Hex disk and file editor	20	****
Frac	AmigaNuts	1251	Adventure game creator	18	****
GadTool Box	Fred Fish	Fish 731	Create Intuition font ends	22	*****
ICalc	Fred Fish	Fish 742	Brilliant Shell-based calculator	22	*****
MIDI Library	Fred Fish	227	Program MIDI applications	9	*****
Map Editor	AmigaNuts	–	Map editor for AMOS	19	****
MegaEd	Fred Fish	Fish 743	Powerful text editor	22	*****
MemSnap	Fred Fish	Fish 826	Trace lost allocated memory pools	27	****
MinTerm	Fred Fish	Fish 560	Calculate blitter minterms	28	****
NorthC	AmigaNuts	1112	C Compiler	6	****
PCQ Pascal	AmigaNuts	1113	Pascal compiler	6	****
Power Logo	EdLib	24	Enhanced Logo Interpreter	9	***
Remm and Rams	Deja Vu	Licenseware	Map editor and scroller utilities	17	***
Stripit	Fred Fish	Fish 750	Strip comments from ascii source code	22	****

GRAPHICS UTILITIES

3D Objects Disk 1	AmigaNuts	–	Collection of Sculpt Objects	8	****
3DFont	17Bit	1007	Text to Sculpt Object	3	***
AMOS Paint	Deja Vu	83	Paint package	3	***
BezSurf 2	Fred Fish	315	Create shaded 3D objects	10	***
CMDemo	Fred Fish	Fish 757	Demo of ASDG's CineMorph	23	***
Converters	17Bit	1221	Image conversion tools	9	***
DPaint Tutorial	Soft Express	U160	Comprehensive DPaint tutorial	22	*****
Deluxe Draw	Slipped Disk	18	Paint package	3	**
Desktop video pack 2	Anglia PD	–	Various DTV utilities inc titler	17	***
DrawMap	Fred Fish	315	Generate maps of the world	10	***
FracScape	Various	–	Fractal landscape generator	18	*****
HAMLab	AmigaNuts	1149	Image processing	3	**
ImageLab	PDSoft	V518	Image processing program	12	****
LandBuild	AmigaNuts	1190	Fractal landscape generator	9	**
Mandel Mountains	Softville	751	Creates 3D Mandelbrots	5	****
MapTrix	Fred Fish	Fish 853	Fractal texture mapping utility	28	*****
PictSaver	Fred Fish	543	Grab screens in IFF Format	9	*****
Plasma	Fred Fish	573	Fast fractals program	11	***
SkyPaint	TBAG	37	Text-based graphics	3	***
SlideShow Kit	VirusFree	1465	Create your own slideshows	3	****
SpectraPaint	Slipped Disk	19	Paint package	3	****
Sprite Designer	AmigaNuts	1102	Create animated sprites	6	**
Vector Designer	AmigaNuts	–	Vector graphics designer	9	**
Video Text Displayer	AmigaNuts	1199	Basic text scroller	9	***

EDUCATIONAL SOFTWARE

4 Stroke Engine	PD Soft	V738	Demonstrates 4 stroke engine	19	****
CPK	Fred Fish	809	Create rendered molecule illustrations	26	****
Complete Bible	PD Soft	V715-717	Complete Bible on three disks	19	****
Constellations	Astronomy News	–	Info on stellar constellations	20	***
Drafu	fred Fish	Fish 854	Function plotting utility	28	***
JigMania	Deja Vu	LPD13	Maths/Logic	5	****
Learn&Play	Riverdene	Mis637	Maths/Reflex/Logic	5	****
MathPlot	Fred Fish	Fish 850	Mathematical function plotter	27	****
Maths Reflex	Anglia PD	C728	Test your maths	20	****
Maths4Fun	AmigaNuts	1146	Maths	9	****
Quingo	Deja Vu	LPD21	3 'R's	5	***
Runes	DTP	OS125	Mystic runes explained	18	***
Shapes	Riverdene	GAM907	Maths/Logic	5	****
Simon	Deja Vu	APD135	Reflex/Memory	5	***
Space Maths	Deja Vu	APD135	Maths	5	****
Spell4Fun	AmigaNuts	1146	Spelling	9	****
TouchStones	Deja Vu	LPD18	Logic	5	****
Treasure Search	Deja Vu	APD2	Maths/Logic	5	***
WarBook	Asgard Software	Freeware	History of World War 2	21	***
ChemBalance	Fred Fish	Fish 759	Balance chemical equations	23	****
XTables	AmigaNuts	1146	Maths	9	*****

FOR SUPPLIER INFORMATION ON ALL THE PRODUCTS LISTED ABOVE SEE UK PD HOUSES PAGE 102

BUYING ADVICE FOR SHOPPERS

Whether you're buying over the phone or at a local store, here's our advice on getting what you want.

BUYING IN PERSON

- Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.
- Make sure you have all the necessary leads, manuals or other accessories you should have.
- Don't forget to keep your receipt.

BUYING BY PHONE

- Be as clear as possible when stating what you want to buy. Make sure you confirm all the technical details of what you are buying. Some things to bear in mind are version numbers, memory requirements, other required hardware or software and compatibility with your particular model of Amiga (that is, make sure you know which version of Kickstart you have).
- Check the price you are asked to pay, and make sure that it's the same as the price advertised.
- Check that what you are ordering is actually in stock.
- Check when and how the article will be delivered, and that any extra charges are as stated on the advert.
- Make a note of the date and time when you order the product.

BUYING BY POST

As with buying by phone, you should clearly state exactly what it is you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up where necessary. You should also make sure you keep copies of all correspondence both to and from the company concerned.

MAKING RETURNS

Whichever method you use to buy, you are entitled to return a product if it fails to meet any one of the following three criteria:

1. The goods must be of "merchantable quality".
2. They must be "as described".
3. They must be fit for the purpose for which they were sold or for the purpose you specified when ordering.

If they fail to satisfy any or all of the criteria, then you are then entitled to:

- Return them for a refund.
- Receive compensation for part of the value.
- Get a replacement or free repair.

When returning anything, ensure that you have proof of purchase and that you return the item as soon as possible after receiving it. For this reason it is important that you check as soon as it is delivered to make sure everything you ordered is there and works as it is supposed to.

HOW TO PAY

Paying by credit card is the most sensible way, whether buying in person, by post or on the phone, because you may be able to claim your money back from the credit card company even if the firm you ordered from has gone bust or refuses to help sort out your problem.

Otherwise, you should pay by crossed cheque or postal order – never send coins or notes through the mail.

GETTING REPAIRS

Always check the conditions of the guarantee, and servicing and replacement policy, so that you know what level of support to expect. Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions contained in the guarantee.

BUYING PD

Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are, in theory, supposed to be non-profit-making operations. AS

BUYING BY MAIL

• Before you send any money, ring the supplier to confirm that the item you want is in stock and when the delivery is likely to be made. Enquire about returning unwanted goods and the supplier's refund policy. Find out about hidden extras like postage and packing charges, and whether the prices quoted include VAT.

• Beware of companies that do not include an address in their adverts.

• If ordering goods of more than £100 in total value, always try to use a credit card – if anything goes wrong, you will be legally entitled to claim against the credit card company, even if the retailer has gone bust. You may also get extra insurance – check with the credit card company.

• Always buy from the most recent issue of *Amiga Shopper*.

• When your order arrives, check everything carefully. If anything is missing, don't use the product at all – contact the supplier immediately. If something doesn't work, make the obvious checks such as the fuse, but don't try to fix the product.

• If a problem does arise, contact the supplier in the first instance and calmly and politely explain your problem. In most cases these things are merely a mix-up or a misunderstanding that the supplier will happily put right. If you think you have a genuine grievance that has not been resolved, you might consider contacting your local Trading Standards Officer (the number will be in the phone directory – check the local council listing).

• Always keep records of correspondence with any mail order company you deal with and also make a note of where and when you saw the product advertised. False or misleading advertising is an offence, and suppliers must stick to what they've said in adverts.

ADVERTISERS INDEX

AMIGA SHOPPER
Issue 30 – October 1993

Editor: Cliff Ramshaw
Art Editor: Mark Nottley
Production Editor: Alex Soboslay
Staff Writer: Gus Chandler
Consultant Editors: Jeff Walker, Mark Smiddy, Ian Wrigley
Contributors: Jason Holborn, Gary Whiteley, Dave Winder, Toby Simpson, Wilf Rees, Jolyon Ralph
Photography: Stuart Baynes
Cover image manipulation: Chris Stocker
Additional Layout: Diana Taylor
Ad Manager: Margaret Clarke
Ad Production Manager: Tracy O'Donnell
Ad Design: Lisa Withey
Production Technicians: Jon Moore, Mark Gover, Heath Parsons, Simon Windsor, Chris Stocker
Group Production Manager: Judith Middleton
Production Controller: Claire Thomas
Production Control Assistant: Ginette McKeown
Paper Controller: Fiona Deane
Admin Assistant: Suzannah Angelo-Sparling
Publisher: Stuart Anderton
Group Publishing Director: Greg Ingham

Member of the Audit Bureau of Circulations
ABC Audited circulation
July – December 1992: 43,290

Printed by Southernprint Ltd, Poole, Dorset
ISSN 0961-7302 Printed in the UK
Circulation Manager: Jon Bickley
News Trade Distribution –
UK: Future Publishing 0225 442244
Worldwide: MMC Ltd 0483 211678

Editorial: 30 Monmouth Street, Bath, Avon BA1 2BW
☎ 0225 442244 Fax: 0225 446019
E-mail: amshopper@cix.compulink.co.uk

Advertising: Rayner House, 23 Higher Hillgate, Stockport SK1 3ER. ☎ 061 474 7333 Fax: 061 476 3002

Subscriptions: Future Publishing, Somerton, Somerset TA11 6TB. ☎ 0458 74011

IN NEXT MONTH'S ISSUE

So, we've reached the end of another issue (well, okay, there's the competition on the next page, but I digress). You're probably wondering what kind of wonderfulness we're going to be bringing you next month. So, Cliff, what kind of wonderfulness are we going to be etc etc?

Well, Cliff, I'm glad you asked me that, because it's not often I get the opportunity to talk to such a knowledgeable person as yourself. I was thinking we might do an *Amiga Answers* special.

Really? We'd have to answer loads and loads of questions. Have we the room?

Oh yes, Cliff, we'll be having well over 20 pages devoted to solving every conceivable sort of Amiga problem.

Hardware and software?

Naturally.

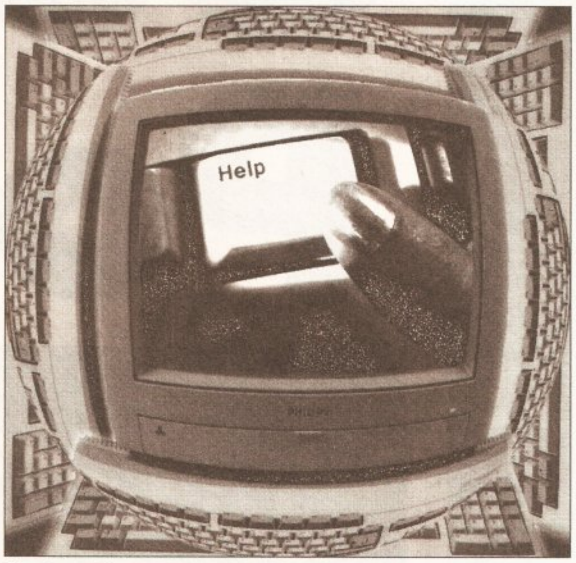
Sounds good. What exactly are you thinking of covering?

Printers are a must – lots of people have problems with those – as are desktop publishing and word processing. We'll have to do something on video and graphics, and I think we'll need a section on AmigaDOS. Oh yes, I nearly forgot – memory, too.

Is that all, then, Cliff?

Oh no, Cliff. I haven't mentioned hard drives, accelerators, business software, comms, music or programming yet.

How will we deal with all these?



Next month our expert panel really goes to town on your Amiga problems, while the editor babbles incoherently...

We'll answer both commonly-asked questions and more specific genuine reader queries.

Is that all for programming?

We'll also have a special feature on debugging.

What about beginners?

Do you really think I'd forget to put a special beginners' section in there?

No, you're brilliant, of course. Is it true we're having a cover disk next month?

Yep; one packed solid with the best public domain and shareware utilities we can find. Believe me, Cliff, it'll be unbeatable.

Oh look, Cliff, the men in white coats are here again. I think they want to take us somewhere.

Just so long as they let us out in time to get *Amiga Shopper* 31 on sale by Tuesday 5 October! AS

WIN A YEAR'S FREE SUBSCRIPTION

Okay, first correct answer wins. Which famous science fiction movie, first shot as a students' "short", involved a conversation between a spaceship crew and the bomb they were carrying? Send your answers to "Crew And Bomb Conversation", *Amiga Shopper*, 29 Monmouth Street, Bath BA1 2DL. The closing date is Tuesday 14 September.

ARE YOU ONE OF OUR WINNERS?

In *AS* 28 we had two Canon BJ10sx bubble jet printers up for grabs. Our first prize winner is Darren Sale from Kings Norton in Birmingham, who picks up not only a BJ10sx but a sheet feeder unit to boot. Second prize winner Mr B Hill of Hull should soon be leaping for joy as well – he also gets to collect one of these nifty little printers. Congratulations to the lucky pair.

MAG*SAVE

AMIGA SHOPPER SELLS LIKE SPRING WATER IN THE SAHARA – SO DON'T MISS OUT: RESERVE YOUR COPY AT YOUR LOCAL NEWSAGENT NOW!

DEAR NEWSAGENT, Please reserve/deliver me a copy of *Amiga Shopper* every month, beginning with the November issue, which goes on sale on Tuesday 5 October.

Name ____________________

Address ____________________

____

____

Phone ____________________

• NOTE TO NEWSAGENT: *Amiga Shopper* is published by Future Publishing (0225 442244) and is available from your local wholesaler.

• *PS Oh, and if you do have any problems getting hold of your favourite Amiga mag, call Kate Elston on 0225 442244 and she'll help you out.*

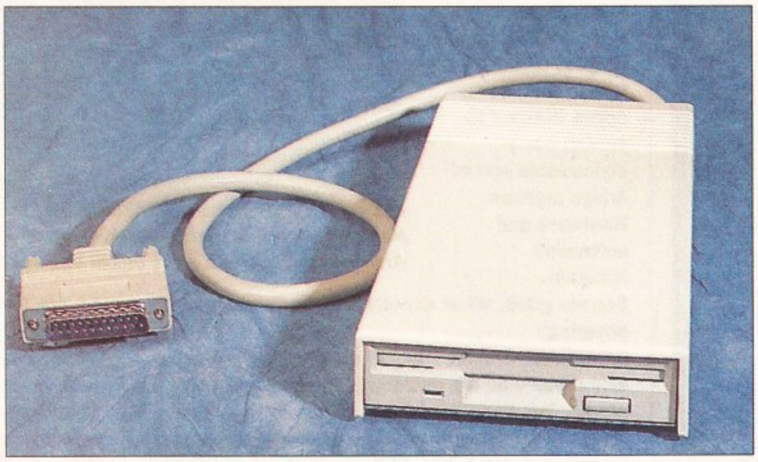
AMIGA SHOPPER AT A GLANCE GUIDE

To help you find what you want quickly and easily, here is a cross-referenced list of all the products and subjects covered in this month's *Amiga Shopper*. You'll find a detailed index to the many subjects dealt with in the problem-solving *Amiga Answers* section given on page 37. The page numbers given are for the first page of the article in which the subject is mentioned.

Are there any products or subjects you'd like us to take a look at? Well, just drop a line to:
***Amiga Shopper*,**
30 Monmouth Street,
Bath, Avon BA1 2BW.

WIN • WIN • WIN • WIN • WIN • WIN

Get the Power!



Double your disk capacity with the Power XL high-density drive, the first for the Amiga – we have five to be won, worth £100 each!

For this month's exciting competition we've teamed up with Power Computing to bring you the chance to get your hands on Power's neat new high-density XL disk drive – for free.

If you saw our review in last month's *Amiga Shopper*, you'll be aware that we were duly impressed, describing Power Computing's high-density XL drive as "an excellent option". (If you missed *AS* 29 and want the full gen on this top-rated product, you can order a copy on page 108.)

What's so good about it? Well, you probably know that "standard" Amiga disks can hold up to 880K of information, and sometimes that's just not enough – for example, when you're busy pushing the graphics capabilities of the Amiga; those 24-bit images fair gobble up the K. With the Power XL that sort of problem will be a thing of the past. The Power XL high-density drive can hold double the volume of information – that's an impressive 1.76Mb.

Another valuable feature is the drive's ability to read and write disks in 1.44Mb PC format – handy when you want to swap data with those primitive PC things. Those Amiga users with Workbench 2.1 or above will be able to do this using the supplied *CrossDos* utility, while 1.3 Workbenchers need to get hold of the shareware *MessyDos* program.

The XL unit, like other Power products, is sturdily built to rigorous quality standards and attractively finished in a solid plastic housing. Fitting it is a doddle as well – simply plug it into the disk drive socket at the rear of the Amiga and you're ready to roll – insert a disk and the drive automatically detects whether it is HD or not. Just run the auto-install program included and you can write as well as read HD disks.

Is your appetite duly whetted? Want to get your paws on one? Then simply answer the three not-too-tricky questions in the box below. Next, send your answers written on the back of a postcard (or a sealed envelope), along of course with your name and address, to:

Get the Power
Amiga Shopper
29 Monmouth Street
Bath BA1 2DL

The closing date for entries is Friday 8 October and the first five correct answers drawn from the editor's cardboard box on that day win. Send only one entry per household and please state if you don't want your name included on a mailing list. AS

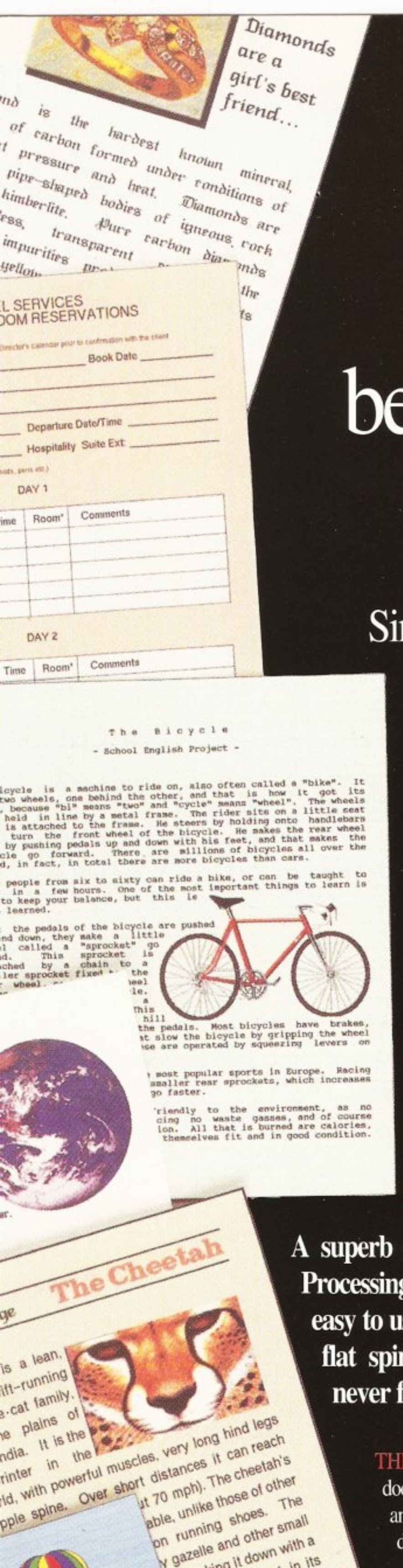
THE QUESTIONS

1. A high-density Amiga disk can hold how much data?
(a) 1.44Mb
(b) 1.76Mb
(c) 880Mb

2. Power Computing are based in which town?
(a) Bedford
(b) Bradford
(c) Beccles

3. Which of these is the densest?
(a) The centre of the sun
(b) A black hole
(c) The microscopically-small magnetic particles on the surface of a high-density floppy disk.

WIN • WIN • WIN • WIN • WIN • WIN

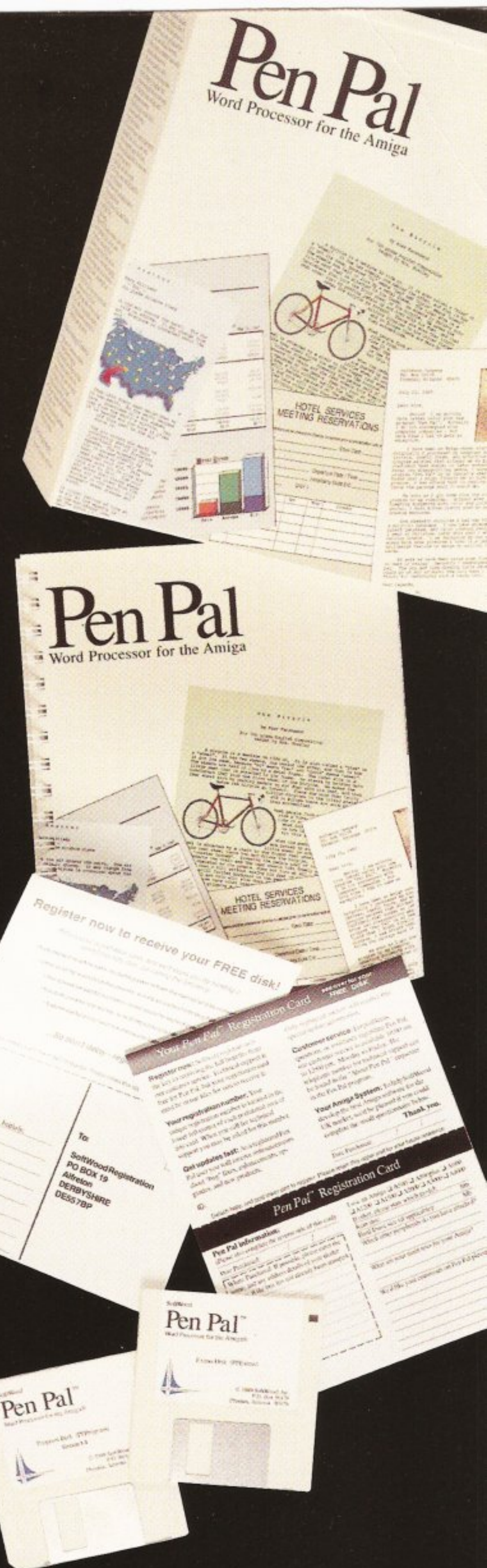


The Best Selling Word Processor and Database just became even better...

VALUE!

Since its launch, Pen Pal has become the most popular package of its type

Not surprising when you consider the extensive features at your fingertips, combined with user friendly simplicity, it was bound to be a winner! In a comprehensive Word Processor test, Amiga Format commented "There is little to fault Pen Pal, it deserves to do well" - quite a prediction it seems! Format have since said that it's "Still the best value for money..." If you're not a Pen Pal user yet, we hope you soon will be, because at just £49.95... the best just became better, even better value!



Pen Pal

A superb package, with immense power, to fulfil all your Word Processing needs, and... with an integrated Database too! It's all so easy to use, you'll rarely need to refer to the extensive 250 page lay-flat spiral bound manual. Users frequently tell us that they've never found a program they get on with so well.

THE WORD PROCESSOR: You can... Open multiple documents simultaneously; search and replace; cut, copy and paste; check your spelling with a 110,000+ word dictionary; import your favourite IFF/HAM graphics, from programs such as DPaint, or Clip Art files in various sizes and colours; automatically flow text around graphics in any Workbench compatible font (there are over 200 available styles) in different sizes and colours to suit your design... Even as you type! Full Page View with position, edit and creation of graphic objects and extremely useful forms designer. All this from a word processor and... Much, Much, More! As you can see from the documents shown on the left, this is no ordinary program!

THE DATABASE: With 32 fields per record, 32,000 records per database and a fast sort of 1000 records in less than 5 seconds, this is a *real* database. Mail merging into the Word processor couldn't be simpler, with easy creation of templates for letters or reports, into which information can be merged.

AND... Remember, Pen Pal comes with full support for the new or experienced user completely free! Friendly help for all registered owners is just a phone call away.

SoftWood - Quality software for your Amiga

*With Pen Pal you're not just getting a one off product! SoftWood are acknowledged as the World's leading software company who develop **just** for Amiga and **no other** system. Once you're a registered SoftWood product owner your investment is protected as you'll have access to unlimited free technical support [others charge you] and preferential upgrades to other SoftWood titles, both existing and future. Exciting new products are being developed right now. Pen Pal - your first step on the SoftWood ladder of Amiga software*

Pen Pal is available from all good Amiga software Dealers or from SoftWood. Call for your list of stockists.

SoftWood Products Europe
PO Box 19 Alfreton
Derbyshire DE55 7RW England
Tel: 0773 836781 Fax: 0773 831040

Pen Pal is compatible with any Amiga from A500 to the latest A1200/A4000 ranges with a minimum of 1 Mb. available free memory.

Power Computing's innovative 4MB 32-bit memory expansion for the Amiga 1200 is now available. The PC1204 includes these many features:

Zero Wait State - Unlike some other expansions the PC1204 never leaves the processor waiting around for data, which means that your A1200 can run at its maximum speed.

Ultra Fast FPU - An optional maths co-processor speeds up intensive calculations. A 50MHz chip will speed up operations by up to fifty times.

Real-Time Battery Backed Clock - Allows files to be date-stamped with the correct time and date so that you know exactly when they were created.

Low Power - High density RAMs means low power consumption.

Easy To Fit - Fitted in minutes without the need to remove the computer's case.

Optional FPU Disable Switch - Disable the FPU instantly for software that will not run with a maths co-processor installed.

	Power PC1204	A leading competitor
Speed Vs standard A600	4.84 times faster	4.79 times faster
Speed Vs standard A1200	2.19 times faster	2.17 times faster
CPU MIPS	2.96	2.93

PC1204 4MB with clock, no FPU Processor **£185.95**
PC1204 4MB with clock, 20MHz 68881 FPU **£219.95**
PC1204 4MB with clock, 25MHz 68882 FPU **£279.95**
PC1204 4MB with clock, 33MHz 68882 FPU **£289.95**
PC1204 4MB with clock, 40MHz 68882 FPU **£299.95**
PC1204 4MB with clock, 50MHz 68882 FPU **£339.95**

The PC1204 4MB Memory Expansion for the Commodore Amiga 1200.



The XL 1.76MB Drive for the Commodore Amiga.



Power Computing's XL 1.76MB Drive* for any Commodore Amiga is now available. The XL Drive includes these many features:

Formats to 1.76MB - Using high density disks you can fit a massive 1.76MB on each disk.

Acts as a standard drive - Insert an 880K Amiga disk and the drive behaves like any other Amiga drive.

Fully compatible - Will read and write disks written on an Amiga 4000 internal high density drive.

Compatible with PC disks* - Also read and write high density PC disks using a suitable device driver.

Compact size - No larger than a standard 880K floppy disk drive.

High quality design - Uses a high quality Sony high density mechanism.

Comes complete with disable switch and through port.

XL DRIVE

XL Drive £99.95

*Requires Kickstart 2 or above. *Requires Workbench 2.1 or above.

48Hr delivery **£2.50**, 24Hr delivery **£4.50**
Parcel Post delivery **£1** (Orders under £50 & UK mainland only)
Specifications and prices subject to change without notice
All Trademarks acknowledged. VAT included

Power Computing Ltd
Unit 8 Railton Road Woburn Road Industrial Estate
Kempston Bedford MK42 7PN
Tel 0234 843388 Fax 0234 840234